THE

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PROCEEDINGS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

THE American Pharmaceutical Association, pursuant to notice, met in the city of Baltimore, September 9th, 1856, at 3 o'clock, P. M., in the Hall of the College of Dental Surgery.

The meeting was called to order by the President, John Meakim, of New York, W. J. M. Gordon, of Cincinnati, Secretary.

On motion, the President appointed Edward Parrish, of Philadelphia, Edward S. Wayne, of Cincinnati, and Eugene Dupuy, of New York, as a Committee on credentials, who after a recess reported the following list of delegates, viz:

Massachusetts College of Pharmacy—Charles T. Carney, A. P. Melzar, R. R. Kent, and Charles H. Atwood.

New York College of Pharmacy—John Meakim, Eugene Dupuy, H. J. Kiersted, and C. B. Guthrie.

Philadelphia College of Pharmacy—Charles Ellis, Henry C. Blair, William Procter, Jr., S. S. Garrigues, and Fred. L. John.

Cincinnati College of Pharmacy—A. M. Stevens, J. W. Hannaford, W. J. M. Gordon, and Edward S. Wayne.

Maryland College of Pharmacy—George W. Andrews, Charles Caspari, Israel J. Grahame, J. Jacob Smith, and J. F. Moore.

Apothecaries' Association of the District of Columbia—V. Harbaugh, John L. Kidwell, John W. Nairn, Francis S. Walsh, and W. H. Gilman.

On motion, the section relative to electing members by ballot

was suspended, and the following gentlemen, having been recommended by the Executive Committee, were elected, viz:

Edward C. Gilpin,	Baltimore,	William Caspari,	Baltimore,
Joseph Roberts,	"	Oscar Monserrat,	"
John W. Barry,	"	Wm. S. Thompson,	"
Charles Wiseman,	"	L. Phillips,	"
George J. Fetter,	"	R. H. Dryden,	"
J. B. Baxley,	"	Frederick Thompson,	N. York,
James Balmer,	"	John M. Maisch,	Philadelphia,
J. H. Lemmon,	"	William Heyser, Jr.,	Chambersburg, Pa.
William Reed,	"		
James W. Bowers,	"	H. A. Blauw,	Rochester, N. Y.
Samuel McPherson,	"	James Walsh,	Washington, D. C.

The Secretary called the roll, and recorded those present.

On motion, a nominating committee was appointed. Each delegation named one of its members, and the president appointed two from the non-delegated members present, to nominate officers for the ensuing year, and report at the next sitting. They are as follows:

C. B. Guthrie, of N. York College; Edward Parrish, of Philadelphia College; E. S. Wayne, of Cincinnati College; J. F. Moore, from the Maryland College; and F. Stearns, of Detroit, and A. P. Sharp, of Baltimore, from the non-delegated members.

[The delegations from Massachusetts and the District of Columbia did not arrive in time for the first sitting, but subsequently appointed members to act with the committee.—EDITOR.]

The report of the Treasurer, J. S. Aspinwall, of New York, was read by C. B. Guthrie, and with his vouchers was referred to G. W. Andrews, of Baltimore, and H. T. Kiersted, of New York, to audit.

The report of the Executive Committee, Messrs. Coggeshall, Mathews and Procter, was read by William Procter, Jr., accepted, and laid on the table for future action.

[The following is an abstract of this report:

The Proceedings of the Meeting in New York in 1855, were published in a pamphlet of 40 pages; one thousand copies were printed and distributed at an expense of eighty-three dollars.

In the interim since last meeting, the following gentlemen were admitted into the Association through the action of this committee, viz:

Alvah Littlefield, of Boston, Mass.	H. J. Macdonald, of Barnwell Court-house, S. C.
Augustus P. Melzar, " "	
Charles P. Tufts, Dover, N. H.	Robert Battey, Rome, Ga.
H. C. Blair, Philadelphia, Pa.	Felix Glackmeyer, Montgomery, Ala.
Thomas Weaver, "	Joseph A. Lee, Louisiana
John H. Ecky, "	Guilford T. Chamberlain, St. Louis, Missouri
M. Henry Kollock, "	
Charles Bannvart, Harrisburg. Pa.	John A. Child, Madison, Indiana
T. Roberts Baker, Richmond, Va.	J. C. Parr, Cincinnati, Ohio
John Thomson, Sumpter, S. C.	Paul Reinlein, " "
	J. W. Dietrich, Dayton, Ohio.

The duty of issuing circulars of invitation to the Druggists and Pharmaceutists of the United States was duly executed.

The Committee offer the following suggestions, viz:

1*st*. That the plan of offering prizes be abandoned, as hitherto it has failed in enlisting the talents of Pharmaceutists; in lieu of which it is recommended that the Association, at its annual meetings, distribute subjects to individual members for investigation, to be reported on at the next meeting. Should any one of them merit the particular approbation of the members, it may, on resolution, supported by two-thirds of those present, receive a reward to be designated in the resolution.

2*d*. It is recommended that due care should be observed in selecting members whose interest in the subjects will induce the requisite attention, so that an interesting series of reports may be confidently anticipated.

3*d*. When desirable, a subject may be submitted to two or more members, but individual responsibility is deemed most productive.

4*th*. The Committee submitted a list of subjects as an example of what they intend, but desire that it will not prevent members from suggesting others that may be more important and useful. (See page 494 for this list, with the names of members who have agreed to investigate them.

5*th*. Proposes a form or blank to be used by the Executive Committee in the admission of members, which the candidates shall be required to sign. (See page 494.)

6*th*. Recommends the price of the Certificate to be fixed at three dollars.

7*th*. Proposes the appointment of a Committee to report to the next annual meeting, on the manner in which the Association may most efficiently contribute its aid in the revision of the U. S. Pharmacopœia at the next decennial period, 1860.]

The report of the Committee on the Certificate of Membership, Messrs. Ellis, Procter, Meakim, and Laidley, was read by the Chairman, and a copy of the new certificate exhibited. The report was accepted, and on motion of C. B. Guthrie, a

vote of thanks was tendered to the Committee for the able manner in which they have executed their trust.

[From this report we learn that the design of the Certificate originated with the Committee, but they acknowledge valuable aid from Robert Coulton Davis, of Philadelphia, in perfecting its details preparatory to its submission to the artist. A description of the picture will be found at page 187 of this volume. The expenses incurred by the Committee amount to $122 25, and their receipts from fifty-seven members, who have taken the certificate, to $171.]

The Committee on standards of quality for Drug Examiners, Messrs. Procter, Coggeshall, Carney, and Wayne, made a report, which was accepted and laid upon the table for future action.

[The Committee endorse their report of last year, and request to be discharged from further service.]

The Committee on Home Adulterations was not yet ready to report.

The report on the Statistics of Pharmacy, referred last year to the Corresponding Secretary, being called for, was read by that officer, together with letters from A. E. Richards, of Plaquemine, Louisiana; Robert Battey, of Rome, Georgia; Guilford T. Chamberlain, of St. Louis, Missouri; A. I. Mathews, of Buffalo, New York; Frederick Stearns, of Detroit, Michigan; and subsequently one from S. M. Colcord, of Boston, Massachusetts, and accepted.

[In the course of his report the Secretary says, "It may not be inappropriate to remark, that in an extensive correspondence with apothecaries and druggists of various sections during the past year, he has been gratified with the increasing improvement in the tone of feeling manifested by the writers, not only as regards the Association and its objects, but in reference to the quality of shop practice. One of the greatest impediments complained of, is the difficulty of obtaining efficient and reliable clerks or assistants, which in not a few instances has prevented valuable members from attending this meeting; and it is believed that in no way can the Association prove of more real service to the pharmaceutical profession, than by measures directed to encourage apprentices and assistants to feel a just pride in qualifying themselves by personal *home* exertions, to become skilful in the practical duties of their business, as well as in gaining a respectable knowledge of its theory by earnest study.]

The Committee on the Revision of the Constitution, Messrs. Parrish, Colcord, and Aspinwall, was read by title and accepted.

On motion of Edward Parrish it was agreed, that the Association on Wednesday morning, at 11½ o'clock, commence the examination of specimens, and the reading of scientific papers.

On motion it was carried, that the next business after the election of officers be the consideration of the new Constitution.

On motion, adjourned to meet at 9 o'clock on Wednesday morning.

[As the room in which the Association convened, which was chosen for its central position, did not prove eligible, the succeeding meetings were held at the Hall of the University of Maryland.—EDITOR.]

Second Day—Morning Session—Sept. 10th, 1856.

The Association met at 9 o'clock at the Maryland University. The minutes of the preceding meeting were read, amended, and adopted. The roll was then called, and forty-one members answered to their names.

[Those not before present were S. McPherson, F. S. Walsh, V. Harbaugh, and Wm. H. Gilman, of Washington; J. L. Kidwell, of Georgetown; A. P. Melzar, Charles T. Carney, Charles H. Atwood, and R. R. Kent, of Boston; R. H. Stabler, of Alexandria; A. E. Richards, of Louisiana; Eugene J. F. Russell, Jos. C. Rogers, and G. Davidge Woods, of Baltimore; and James Cooke, of Petersburg, Va.]

The Committee to nominate officers, reported the following nominations, viz:

For *President*—George W. Andrews, of Baltimore, Md.
" 1*st Vice President*—John L. Kidwell, of Georgetown, D. C.
" 2*d* " " Frederick Stearns, of Detroit, Mich.
" 3*d* " " H. T. Kiersted, of New York city.
" *Treasurer*—James S. Aspinwall, of New York city.
" *Recording Secretary*.—W. J. M. Gordon, of Cincinnati, Ohio.
" *Corresponding Secretary*—William Procter, Jr., of Philaphia, Pa.

The nominees were separately balloted for and elected.

The delegations from Boston and Washington being now present, the former appointed Charles H. Atwood, and the latter V. Harbaugh, members of the nominating committee, who have further to report ten names for the standing committees.

The President elect was now conducted to the chair by Mr. Meakim, the late president, and in a pertinent speech returned

thanks to the Association, and promised his best exertions for its advancement.

On motion, in order to facilitate the business devolving on the Treasurer, the resolution of yesterday making the consideration of the revised Constitution the first business in order after the election of officers, was suspended to receive the report of the auditing committee, which was read, accepted and approved. When on motion, C. B. Guthrie was appointed Treasurer *pro-tem.*

The following gentlemen, recommended by the Executive Committee, were duly elected members of the Association, viz: H. H. McPherson, Washington, G. Davidge Woods, Baltimore, Eugene J. F. Russel, Baltimore, James C. Rodgers, "
James Cooke, M.D., Fredericksburg, Va.

The consideration of the revised Constitution was now called up.

On motion, each Article was read and considered separately.

On motion it was carried, after considerable discussion, that the word "apothecary," wherever it occurs in the printed draft of the Constitution as presented by the Committee, shall read pharmaceutist.

[There were several advocates of the displaced title, on the ground that it has an American signification, by usage, quite different from that belonging to it in England, and similar to the term "Apotheke" of the Germans; but on the contrary it was argued that as our profession is called Pharmacy, its followers should be called by a name derived from it, and the term pharmaceutist was considered preferable to the compound name of "Pharmaceutical Chemist," adopted by the Pharmaceutical Society of Great Britain.—EDITOR.]

After some few amendments, the Constitution as amended was laid on the table, to be engrossed for adoption at a future sitting.

The hour having arrived for reading scientific papers and for examining specimens, the formality of the meeting was suspended, and a table filled with interesting specimens brought in front of the President's desk.

A paper on the action of Oil of Sassafras upon metallic vessels containing lead, and upon the compound formed thereby, was read by Edward S. Wayne, of Cincinnati, who exhibited a specimen of the oil and the lead compound.

[Mr. Wayne next presented specimens of crude cotton seed, of the seed

deprived of their episperms and ground, of the crude oil by expression and of the oil refined, and more or less decolorized, accompanied by the following verbal remarks, which, at our request, he kindly put upon paper for the readers of the Journal.—EDITOR.]

The manufacture of oil from cotton seed is not a novelty; a small quantity has been made at the South for some years past; lately, however, the demand for lubricators has turned the attention of many to cotton seed, (immense quantities of which are allowed to rot, or used only as a manure upon the cotton fields of the South,) as a material from which large quantities of oil might be profitably obtained.

At New Orleans I have been informed that a quantity of this oil has been of late produced, a sample of which I have seen. It was a very bland, light colored oil, said to be made by steaming the seeds and collecting the oil by skimming it from the surface of the water. I cannot vouch for the correctness of the above process.

In Cincinnati some of the oil millers have made the attempt of pressing cotton seed for the oil, but the experiments so far, I believe, have been very unsatisfactory, both in regard to the quality of the oil obtained and in the cost of it.

The oil, to be made profitably, should either be manufactured in the vicinity of the cotton plantation, (as the seeds from the attached fibre are bulky, and the cost of transportation an item,) or the seed should be hulled at the spot and shipped to the place where it is to be pressed in that condition, as it requires three or four bushels of seed in the wool to produce one bushel of hulled seed ready for the mill.

The oil as it runs from the press is of a very dark red color. After standing some time it deposits a portion of the coloring matter, also a portion of a semi-solid fat; and in cold weather this is deposited to a large extent; and is only partially taken up upon increase of temperature. The color of the oil obtained by pressure is one great objection to its general use, and is very difficult to remove; in bleaching it at least ten or fifteen per cent. of the oil is lost, a portion of which may be recovered, and used in the manufacture of soap, for which purpose cotton seed oil is better adapted than for any other purpose. It is a drying oil, consequently not fit for lubricating, and when burnt gives a

smoky flame, and forms rapidly a crust upon the wick. Others say that it answers for both purposes; but all I have met with, upon being used practically for lubricating or burning, gave very unsatisfactory results.

A very good soap is made from it at New Orleans for common purposes; but I think that a soap in every respect equal to the imported Castile could be cheaply made with it.

The dark color of the oil obtained by pressure is due to the presence of a dark resinous substance, presenting itself in small dots throughout the seed. These may readily be seen by examining a section of the seed with a lens, or even the naked eye.

The hull and attached fibre are useful for paper stock; and the cake left after the extraction of the oil is nearly as valuable a food for cattle as that of linseed.

Mr. Wayne also called attention to a sample of the Oil of Pignut Hickory, of which he gave the following account:

The Caraya porcina, commonly known as the pignut hickory, is a forest tree of wide range in North America. This tree produces a nut which contains a very oleaginous kernel, between which and the shell, and the lobes of the kernel, a corky matter of a very astringent taste is deposited. The nut in consequence is not edible, but yields by crushing and pressure a light yellow colored oil, possessing a bland, slightly astringent taste; the astringent taste is due to the accidental presence of a trace of the astringent matter mentioned, which might easily be removed, and then it would be equal, for many purposes of the pharmaceutist, to the best olive oil.

This oil has been for several years past an article of commerce in Ohio, the market value of which ranges from $1 to $1.25 per gallon, and the supply of late has not been equal to the demand.

It is very rich in olein, and remains, consequently, fluid at a much lower temperature than most fixed animal and vegetable oils. During the extreme cold of last winter in Cincinnati, where sperm and other oils were in a solid condition, this oil thickened, but could be readily drawn from the vessel containing it.

As a lubricator it is said by those who have used it to be equal to sperm oil, or for the purposes of illuminating not inferior.

The value and extensive demand at present for oils for lubricating and other purposes, should attract attention to the production of oil from this nut, thousands of bushels of which are allowed yearly to fall to the ground and rot, which if collected and the oil extracted, would cut off the necessary importation of a large amount of oils, such as the rape, olive, &c., and pay a handsome remunerative profit to the maker. I have been informed by those who make it in Ohio, that the yield per bushel is one and a half gallons, and that they purchase the nuts, through the country, of the store-keepers for 50 cents the bushel.

Mr. Wayne exhibited nitre earth from the neighborhood of Nashville, Tennessee, which yields 15 per cent of saltpetre, and is said to be in sufficient abundance to supply the demand of the United States.

The same gentleman exhibited paraffine from the cannel coal of Western Virginia, and stated that a ton of the coal, when distilled at a moderate temperature, yielded from 700 to 800 lbs. of liquid products, which by subsequent treatment afforded 50 lbs. of paraffine. Mr. Wayne suggested that paraffine properly purified will answer as a substitute for wax, and that a bland oil may be extracted from the liquid products obtained by superheated steam, so mild in qualities as to be substituted for olive oil and lard in ointments, thus obtaining both wax and oil from coal.

Mr. Dupuy also exhibited specimens of paraffine.

Mr. Wayne presented for examination a specimen of the Mexican soap root, which appears to be a different root from that described by Mr. Simmons (Amer. Jour. Pharm. vol. 26, page 482) as so common in California. The most remarkable characteristic of this root is the peculiar spiral arrangement of the fibres of its cortex, which gives to the cylindrical root the appearance of a small bundle of Para sarsaparilla. It appears to contain a saponinoid principle. Its infusion froths powerfully by agitation, and is used in Mexico as a substitute for soap.

Mr. Wayne next read a paper on Leptandra Virginica, in which he describes a bitter principle upon which the activity of the root depends, and which is quite different from the so-called Leptandrin described in the Eclectic Dispensatory, see vol. 26, page, 505, of this Journal.

Prof. Guthrie announced the decease of our late member,

William Thomas, in a few appropriate remarks, and offered the following resolution, which was adopted:

"Resolved, That this Association have learned with deep regret the decease of one of their members, William Thomas, of Jersey city, New Jersey, and they hereby tender their condolence to his bereaved family.

The meeting then adjourned to 4 o'clock this afternoon.

Afternoon Session—Sept. 10th, 1856.

The meeting was called to order by the President, and the minutes of the morning session were read, corrected, and adopted.

On motion of Edward Parrish, it was Resolved, That the Faculty of the University of Maryland, and of the Maryland College of Pharmacy, be invited to seats in this Convention.

On motion, it was carried that the Association resume the examination of specimens, and the reading of scientific papers at 4½ o'clock.

The report of the Committee on Text-books, (Messrs. Procter, Ellis, and Sharp) was read by the Chairman.

To the American Pharmaceutical Association.

The undersigned, a Committee appointed at the last meeting of the Association, to report on the question "What are the best text-books published, for study and reference," offer the following as their report.

According to Webster, a text-book, in the sense here intended, is "a book containing the leading principles or most important points of a science or branch of learning, arranged in order for the use of students." The question naturally divides itself into an inquiry relative to books for study, or text-books for the student of Pharmacy, and books for reference, to be used by him, but more frequently by the pharmaceutist, in the course of his business, to point out the causes of incompatibility in dispensing, or to explain difficulties that arise in the laboratory; and we shall therefore consider them separately.

Of the students of Pharmacy in the United States, of all grades, perhaps nineteen-twentieths never have the advantage of lectures, and are left to feel their way through the treatises on materia medica, chemistry and pharmacy that they may possess, without any systematic arrangement to aid them in appreciating the several subjects. The novice, who takes up the Dispensatory at the beginning, soon becomes interested in the botanical and commercial history and chemical properties of the acacia gums, and suddenly finds himself out of depth in the chapters on acids, involving much chemical technicality; and after these he dips successively into

aconitum, alcohol, aloes and ammonia. The alphabetical arrangement of the Dispensatory is one of its advantages as a book of reference in the course of business, but to the student, without a syllabus to guide him, it is the source of continued annoyance and loss of time. Hence in view of the definition of our great lexicographer, the United States Dispensatory, in its arrangement, can hardly be considered a text book for the pharmaceutical student, unaided by instruction. And yet it is his main dependence, and intrinsically merits all the eulogiums that it has received. As a compendium of materia medica and pharmacy for the use of the physician and apothecary, the United States Dispensatory is so generally reliable, comprehensive, and perspicuous, that no work of the kind in the English language approaches it in usefulness. This has mainly arisen from the authors' just appreciation of the wants of the two classes for whom it was written.

What the *home* student wants to aid him is a syllabus, to be used in connection with the Dispensatory, as a guide book for study, which will take the place of the lecturer, in so far as such a substitute can do it, and it is worthy of consideration whether a suitable committee could not prepare such a work, within moderate limits, that would prove of great service to apprentices and assistants, and be eminently creditable to the Association, under whose auspices it might be published. It would be within the scope of such a work to make constant references to the authors most advantageously to be consulted in the progress of study, without loading it with quotations, and so enable the student to avail himself of the best information at the appropriate moment without waste of time.

Next to the United States Dispensatory we would place the great work of Pereira. As an encyclopedia of materia medica, and especially in the beautiful arrangement in groups according to the natural system of botany, of the large part pertaining to the vegetable kingdom, it is admirably suited to the advanced student. Besides, as the preparations of each drug are described in connection with it, the student also pursues the study of materia medica and pharmacy together, which is the true course when not following separate lecturers. The pharmaceutical part of Pereira's work, however, is not so well suited as that of the United States Dispensatory as a guide to the American student, as the latter is strictly conformed in its nomenclature to the United States Pharmacopœia.

Before materia medica and pharmacy, as exhibited in the Dispensatories, can be properly understood, the student must acquaint himself with the elements of chemistry and botany and with pharmaceutical manipulation. It might at first thought be considered that the manipulations of pharmacy are best learned in the shop and laboratory; but this is true only of those establishments wherein manipulations are carried on to such an extent as to afford an opportunity to the apprentices or assistants to become familiar with them, and when so learned they are most effectually acquired. Unfortunately a very large number of the pharmaceutists throughout this country make so few of the nicer chemical and pharmaceutical preparations,

that, unless through books, their pupils know very little of manipulation except that learned at the counter or the mortar stand. Hence the advantage of such works as Mohr and Redwood's Practical Pharmacy, which enter minutely into a description and figuration of apparatus, describing the difficulties that arise in using them, and the means of combating and overcoming these. Of works on pharmaceutical manipulation, strictly speaking, the one alluded to is the best, as it is in fact the only one yet published in English, with the exception of a small book by Dr. Kane, of Dublin, many years ago. To these must be added the volume recently published by Edward Parrish of Philadelphia, on Practical Pharmacy, which is addressed both to the physician and apothecary, and enters to some extent into the manipulations of the laboratory, but chiefly treats of the processes conducted in the shop, and particularly those required in extemporaneous pharmacy. There is so much that is useful to the young pharmaceutist in this book, and so many valuable hints to those in business, that it should find a place in every shop library.

The study of chemistry is the most important as it is the most difficult of all the collateral branches of a pharmaceutist's education; the one that gives him the most power when applied in his professional pursuits, and the most reputation among the scientific. Chemistry is indeed the groundwork of every important process, and none can expect to excel who do not make it their study. The student of chemistry should, as early as practicable, get a mental outline grasp (if we may so speak) of the leading principles of the science, to do which it is necessary to select a text-book that presents the subject in a form so compact that the mind can take it in with a reasonable effort. "Fownes' Chemistry for Students" will meet this demand better than larger works, yet the treatises of Grahame, Kane and Turner may be employed when more convenient of access. Of course these remarks apply to the early career of the student; as he progresses, the more extended works will naturally attract attention. The study of analytical and applied chemistry must always *follow*, if pursued at all, the elementary studies above referred to, and embrace a practical knowledge of chemical manipulation. But very few apothecaries have the time or qualifications to become eminent practical chemists, and yet almost every one may become sufficiently familiar with the outlines of analysis to detect adulterations, and with applied chemistry to make many of the nicer chemicals of the shop. We would recommend the little work called "Bowman's Practical Chemistry" to the young apothecary who desires aid in analysis, and to the more advanced, the work of *Heinrich Will*, called "Outlines of Chemical Analysis," translated by Drs. Breed and Steiner. The apothecary with predilections for practical chemistry, will do well to read carefully "Faraday's Chemical Manipulations," or "Morfit's Chemical and Pharmaceutical Manipulations." The latter work is most accessible, and is well illustrated.

Botany, as a distinct study, is rarely pursued by the American pharma-

ceutist; and yet so intimately is it connected with the study of materia medica, and the practical distinguishment of organic drugs, that it seems almost unaccountable why it should be neglected. None of the American Schools of Pharmacy have regular courses on botany, so far as we know, yet the rudiments are generally explained by the teachers of materia medica. We believe that apothecaries would be the gainers by encouraging their apprentices to cultivate a taste for this science, not only for its intrinsic usefulness, but as affording a mental occupation greatly advantageous to the boys themselves. Gray's, Balfour's or Lindley's "Elements" will be found useful text-books for beginners, and the School Book of Botany by Mrs. Lincoln is also well adapted.

In concluding our task by a catalogue of works of reference for the pharmaceutist's library, it will require some care to avoid a redundancy. Besides regular treatises on the sciences collateral to Pharmacy, the thoroughly furnished apothecary will require formularies, dictionaries, technologies, etc.

Gmelin's hand book of Chemistry, 12 vols., now publishing by the Cavendish Society.

Regnault's Chemistry, 2 vols.

Lowig's Principles of Organic and Physiological Chemistry.

Gregory's Organic Chemistry, (1856.)

Muspratt's Chemistry of Arts and Manufactures.

Booth's Encyclopedia of Chemistry.

Griffith's Medical Botany.

Pereira's Materia Medica.

Dorvault's l'Officine (a compendium of information of various kinds that relate to the apothecary business, in French.)

Redwood's Gray's Supplement.

Griffith's Universal Formulary.

Mohr and Redwood's Practical Pharmacy.

Parrish's Practical Pharmacy.

Darby's Translation of Wittstein's Pharmaceutical chemistry.

It was moved and carried that a Committee of three be appointed to recommend a suitable Committee to draft a syllabus for pharmaceutical students, and report at a future sitting of this meeting.

The Chair appointed Wm. Procter, Jr., Charles Ellis, and Edward S. Wayne.

On further discussion this Committee was instructed to act, instead of referring it to another Committee, and the name of Edward Parrish added to their number.

The report of the Committee on prizes was read and accepted.

[This report informed that there had been no prize essays offered.]

The following forms for the signatures of applicants for membership, and for the certificate, as offered by the Executive Committee, were read and adopted, viz.:

I, A—— B——, of D——, approving of the objects of the American Pharmaceutical Association, am desirous of joining it in membership; and having read its Constitution I hereby signify my approval of it.

(Signed) A——— B———.

I, A—— B——, of D——, hereby agree to return my certificate of membership in the American Pharmaceutical Association to the Treasurer of that body, if I shall hereafter cease to be connected in membership with it.

(Signed) A——— B———.

The list of subjects for investigation proposed in the fourth recommendation of the Executive Committee's report, (see page 483) was now read, and after some discussion the following resolution was passed, viz.:

It was on motion, Resolved, That the questions embodied in appendix B of the Executive Committee's report be adopted and published in the Proceedings, and that the recommendation of the Committee in regard to their being read and published, and in regard to the award of prizes, be adopted, with the exception of that part providing for their previous reference to a Committee.

[As some doubts existed as to whether the mere publication of these subjects would induce Pharmaceutists to take them in hand, the Executive Committee, by application to the members present, succeeded in getting most of them accepted, and in the following list we publish the names of those members who have agreed to act.—EDITOR.]

1st. What are the actual sources of the light Cod-liver oil of American commerce, both as relates to the species of fish that yield it, and the places where it is extracted? Is it adulterated with sperm or fish oil? and if so, is it done by the producers or collectors, or after it enters commerce?

Accepted by Robert R. Kent, of Boston.

2d. The substance known in commerce as New England Isinglass, is said to be made from the intestines of the cod fish. Quere, where and by whom is the article of commerce prepared, what process does it undergo, what portions of the fish yield it, and what amount is obtained from a single fish?

Accepted by Charles T. Carney, of Boston.

3d. Has Iodine been manufactured in New England from the algaceous plants of that coast; if so, by whom, and to what extent; and what is the relative productive value of the algæ of our own coast, and those of Scotland?

Suggested to Dr. Henry T. Cummings, of Portland, Me.

4th. The manufacture of Castor Oil as a branch of American industry. What is the estimated crop of beans for 1856, where grown, and what the amount of oil extracted up to August 1st, 1857? To what uses besides medicine is the oil put, and how far short of the domestic consumption is the production?

Suggested to Guilford T. Chamberlain, of St. Louis.

5th. It is said that Hyoscyamus niger has become naturalized in some parts of Michigan, in the neighborhood of Detroit. How does the medicinal power of this native grown plant compare with that of the best European grown drug?

Accepted by Frederick Stearns, of Detroit.

6th. What is the actual state of the production of volatile oils in the United States, and more especially in Ohio, New York, and New Jersey, as regards quantity, quality, and locality, together with remarks on the trade in volatile oils generally; their adulterations, tests, &c.?

Accepted by Edward S. Wayne, of Cincinnati, Ohio.

7th. What measures, if any, have been taken to introduce the culture of liquorice root into the United States, and to what extent have they succeeded?

Suggested to Joseph Laidley, of Richmond, Va.

8th. Prof. Calvert, of Manchester, England, has asserted that the article known as "American lard" in the English market, is sometimes found adulterated to a considerable extent with the pulp of potatoes, or other starchy matter. Quere, has this adulteration been noticed in the commerce of this country; if so, how is it most easily detected by chemical or other means?

Accepted by Israel J. Grahame, of Baltimore, Md.

9th. Arnica flowers are largely used in the United States. Has any attempt been made to cultivate the plant in New York, New England, or other parts of this country by the Shakers or others?

10th. The medicinal powers of Cimicifuga are generally admitted, its use is increasing, it belongs to a natural family, (Ranunculaceæ) embracing many active plants containing alkaloids, and yet the attempts hitherto made have not educed any distinct active principle. Quere, to what distinct principle, if any, is the medicinal power of Cimicifuga to be attributed?

Accepted by Edward S. Wayne, of Cincinnati.

11th. It has become proverbial that Digitalis of American growth has not the same amount of sedative power as the European leaf. Quere, does American Digitalis yield a less proportion of digitalin than the imported, and is such digitalin equally active with that of foreign origin?

Accepted by Edward S. Wayne, of Cincinnati.

12th. The Elaterium plant grows readily in Philadelphia. Can it be availably cultivated with a view to the extraction of its peculiar product; and does the elaterium it yields compare favorably with the English drug?

Accepted by Edward Parrish, of Philadelphia.

13th. According to the most recent researches on ergot by Winckler, (Amer. Jour. Pharm. vol. xxiv. p. 346) that chemist obtained an alkaloid from it, which he calls *secalin*, and which he believes to be analogous if not identical with propylamin, the odorous principle of herring pickle. It is desired that the questions be determined: 1st. Whether the volatile alkaloid of ergot possesses the utero-stimulant power of the drug itself. 2d. Whether propylamin, as obtainable from herring pickle, and from narcotin, possesses the same power as secalin; and 3d. In view of the result, what is the best formula for preparing a permanent fluid preparation of ergot that will *fully* represent the drug?

Accepted by William Procter, Jr., of Philadelphia.

14th. What is the correct history of the production of hemlock or Canada pitch, U. S. P., where chiefly produced, how extracted, and is it obtained by incision; also where is the commercial oil of hemlock produced; is it the oil of the leaves, and what is the proportion yielded?

Accepted by Charles T. Carney, of Boston.

15th. On what proximate principle does the anthelmintic power of spigelia depend, is it volatile, and is the odor of the drug a good criterion of its quality; is said principle soluble in water; and what effect have the carbonated alkalies upon it?

Accepted by Richard H. Stabler, M. D., *Alexandria, Va.*

16th. Dr. Wright, of Kentucky, has recently recommended the bark of Liquidambar styraciflua, as a remedy in diarrhœa and dysentery, made into a syrup with cold water, (see Amer. Jour. Pharm. vol. xxviii, Sept.) He likewise states that the resinous exudation which this tree produces at the South, is obtainable by incision from the tree in the States bordering on the Ohio, and that the Kentucky product contains benzoic acid and styracin. It is desirable to have the latter statement corroborated; and if verified, the percentage of benzoic acid that it will yield, and the practicability of obtaining it, as an article of commerce?

Accepted by Valentine Harbaugh, of Washington, D. C.

17th. To what extent is the fecula of the Maranta arundinacea produced in the States of Georgia and Florida, and what impediments prevent its being made to rival that of Bermuda, in beauty and excellence?

Suggested to Robert Battey, of Rome, Georgia.

18th. What are the most approved methods of rendering medicines palatable to the taste and pleasing to the eye?

Accepted by Frederick Stearns, of Detroit.

19th. What are the present sources of senega, serpentaria, spigelia, and other prominent American roots, etc., as supplied in commerce?

Accepted by Prof. C. B. Guthrie, of New York.

The period for scientific communications having arrived, S. S. Garrigues directed the attention of the members to a variety of specimens on the table; among them were *pingwar-at-zumbi* a species of lichen from Japan, used as a means of stopping hæmorrhage; a fine specimen of hippuric acid, a variety of specimens of the cobalt-ammonia series of Professors Genth and Gibbs, and several other substances.

Mr. Garrigues also read a critical paper on the narcotic vege-

table extracts, with an account of a new process for making them, by which their strength is rendered more uniform.

A. P. Sharp read some observations in reference to the custom of coloring tinctures with red sanders-wood, as those of compound tincture of bark, and compound spirit of lavender; and strongly objected to the practice, owing to the insolubility of the coloring matter in water, and the unsightly appearance of a mixture of these tinctures with water. He preferred avoiding all such useless additions, but if they must be added, he preferred to employ the soluble coloring of cochineal.

A paper on effervescing powders, by John M. Maisch, of Philadelphia, was read by Edward Parrish, in which the uses of these powders was minutely considered in their various applications in pharmacy.

F. W. Tomlinson and J. Jacob Thomsen, of Baltimore, being duly recommended by the Executive Committee, were elected members.

Suggestions relative to non-officinal formulæ were made by Mr. Meakim, who advised that formulæ which are in use in various places under the same name, should be rendered uniform by a general understanding effected through the agency of the Association.

Moved and carried that when we adjourn, we will adjourn to meet at 9½ o'clock on Thursday morning; and that the first business in order shall be to fix upon a place for the next annual meeting, and at 12 o'clock resume the reading of scientific papers, and the examination of specimens.

On motion adjourned.

Third Day—Morning Session—Sept. 11*th*, 1856.

About the time adjourned to, the meeting was called to order by the President, and the previous minutes read and adopted.

Thomas H. Helsby, of Baltimore, was elected to membership.

The adoption of a place for the next annual meeting being in order, John L. Kidwell, on behalf of the Washington delegation, invited the Association to meet in that city, promising them a hearty welcome from the pharmaceutists of the District of Columbia. Pending the consideration of this invitation, Charles Ellis, on behalf of the Philadelphia College of Pharmacy, offered the following resolution, viz:

Resolved, that when this meeting finally adjourns, it adjourns

to meet at Philadelphia on the second Tuesday in September, 1857.

After a free discussion the question was taken on the motion of Mr. Ellis, and decided in the affirmative.

The Committee on nominations reported the following members for the standing committees, viz:

For the *Executive Committee*—W. J. M. Gordon, of Cincinnati; Charles T. Carney, of Boston; Edward Parrish, of Philadelphia; Israel J. Grahame, of Baltimore; and C. B. Guthrie, of New York.

For the *Committee on the Progress of Pharmacy*—William Procter, Jr., of Philadelphia; Eugene Dupuy, of New York; Edward S. Wayne, of Cincinnati; James Cooke, of Fredericksburg, Va.; and Francis S. Walsh, of Washington, D. C.

The rules being suspended, the proposed members were elected to the service stated, *viva voce*.

[At a subsequent meeting of these Committees, E. Parrish was elected chairman of the first, and W. Procter, Jr., of the second.]

In view of the fact that great inaccuracy and discrepancy is known to exist in the weights and measures in common use among pharmaceutists in the United States, Professor Guthrie offered the following:

Resolved, That a committee of three be appointed by the chair to take this subject into consideration, and report at the next annual meeting.

C. B. Guthrie, S. S. Garrigues, and C. T. Carney, were appointed to this service.

On motion it was Resolved, That the thanks of the Association are hereby tendered to the late President and Secretary, for the prompt and faithful discharge of their respective duties.

On motion it was Resolved, That six volumes of Gmelin's Chemistry, as offered by the Association for the best essay relating specially to Pharmacy, be awarded to Edward S. Wayne, of Cincinnati, for his admirable series of papers and extemporaneous communications.

On motion it was Resolved, That the whole subject of the sale of poisons by pharmaceutists and others, and the legal means of restraining it, be referred to a committee of five members, to report in 1857.

To serve as this Committee, the President appointed S. S.

Garrigues, A. E. Richards, A. P. Melzar, John L. Kidwell, and Frederick Stearns.

The propriety of this Association taking some action in referance to the next Pharmacopœial Convention in 1860, having been brought forward in the Executive Committee's report, it was resolved that it be referred to a committee of five to report next year; and E. Parrish, of Philadelphia, G. W. Andrews, of Baltimore, S. M. Colcord, of Boston, W. B. Chapman, of Cincinnati, and John Meakim, of New York, were appointed.

A resolution directing the Executive Committee to procure a suitable temporary depository in Philadelphia, for the printed and manuscript documents of the Association, and for any specimens, books, or other contributions, that may become its property, was adopted.

On motion it was Resolved, That the remarks on the plants of Cherokee Georgia, by Robert Battey, presented by the Corresponding Secretary, be referred to the Executive Committee for publication.

The Report of the Committee on Home Adulterations being called up, the chairman, Professor Guthrie, informed the Association that they had no written report, but they were in posession of a large number of facts bearing on various parties, and wished to know whether it was the will of the Association that their names be reported in connection with the facts. After some discussion, during which the difficulty of fixing fraudulent intent on parties who may be in possession of adulterated drugs was fully canvassed, the following resolution, offered by Mr. Procter, was adopted, viz:

Resolved, That the Committee on Home Adulterations be continued, and instructed to report next year all the facts they can authenticate, and bring forward any recommendation in reference to the enactment of State laws controlling this evil, which they may deem advisable; and that the members of this Association, and all others interested, be requested to forward to the chairman of the Committee, C. B. Guthrie, (No. 12 Gold street, New York), all information bearing upon this subject that they may possess.

On motion of Professor Guthrie, G. W. Andrews, of Baltimore, was substituted for George D. Coggeshall, of New York, he having relinquished the drug business.

With the view of more effectually carrying out the expressed wish of many members of this Association, for the compilation of unofficinal formulæ in local use with many physicians of our Union, it was resolved, that a committee be appointed to collect such and report to the next meeting.

The following gentlemen were appointed to this service, viz: John Meakim, of New York, chairman; D. Henchman, of Boston; H. C. Blair, of Philadelphia; W. S. Thompson, of Baltimore; W. H. Gilman, of Washington; Wm. Heyser, Jr., of Chambersburg; A. E. Richards, of Plaquemine, La.; James Cooke, M. D., of Fredericksburg, Va.; R. H. Stabler, M. D. of Alexandria; W. J. M. Gordon, of Cincinnati.

An engrossed copy of the Constitution, as previously read and amended, was now adopted as a whole, and is as follows:

CONSTITUTION.

OF THE

American Pharmaceutical Association.

PREAMBLE.

Whereas, The advancement of pharmaceutical knowledge and the elevation of the professional character of apothecaries and druggists throughout the United States are dear to us in common with all well disposed pharmaceutists; and *whereas*, a large portion of those in whose hands the practice of pharmacy now exists, are not properly qualified for the responsible offices it involves, chiefly by reason of the many difficulties that impede the acquirement of a correct knowledge of their business:—

Therefore, We the members of a Convention now met at Philadelphia, [September, 1852] composed of apothecaries and druggists from different sections of the Union, and from all the Colleges and Societies therein existing, with the objects, of deliberating on the condition of our profession, *do* hereby resolve and constitute ourselves into a permanent Association, to meet annually, at such times and places as may hereafter be determined, for more effectually accomplishing the objects for which we are now assembled, and do now adopt the following

CONSTITUTION.

Article I.

This Association shall be called the American Pharmaceutical Association. Its aim shall be to unite the educated and reputable Pharmaceutists and druggists of the United States in the following objects:

1st. To improve and regulate the drug market by preventing the impor-

tation of inferior, adulterated or deteriorated drugs, and by detecting and exposing home adulteration.

2nd. To establish the relations between druggists, pharmaceutists, physicians and the people at large, upon just principles, which shall promote public welfare and tend to mutual strength and advantage.

3rd. To improve the science and the art of pharmacy by diffusing scientific knowledge among apothecaries and druggists, fostering pharmaceutical literature, developing talent, stimulating discovery and invention, and encouraging home production and manufacture in the several departments of the drug business.

4th. To regulate the system of apprenticeship and employment so as to prevent as far as practicable, the evils flowing from deficient training in the responsible duties of preparing, dispensing and selling medicines.

5th. To suppress empyricism, and as much as possible to restrict the dispensing and sale of medicines to regularly educated druggists and apothecaries.

Article II.—*Of the Members.*

Section 1. Every pharmaceutist or druggist of good moral and professional standing, whether in business on his own account, retired from business or employed by another, who, after duly considering the objects of the Association and the obligations of its Constitution is willing to subscribe to them, is eligible to membership.

Section 2. The mode of admission to membership shall be as follows: Any person eligible to membership may apply to any member of the Executive Committee, who shall report his application to the said Committee. If after investigating his claims they shall approve his election, they shall at the earliest time practicable report his name to the Association, and he may be elected by two-thirds of the members present on ballot. Should an application occur in the recess, the members of the Committee may give their approval in writing, which, if unanimous, and endorsed by the President, shall constitute him a member, and the fact be reported to the Association at the next succeeding meeting.

Section 3. No person shall become a member of this Association until he shall have signed this Constitution, and paid his annual contribution for the current year. All persons who become members shall be considered as permanent members, but may be expelled for improper conduct by a vote of two-thirds of the members present at any annual meeting.

Section 4. Every member shall pay into the hands of the Treasurer the sum of two dollars as his yearly contribution, and is liable to lose his right of membership by neglecting to pay said contribution for three successive years. Members shall be entitled, on the payment of three dollars, to receive a certificate of membership signed by the President, Vice-Presidents and Secretary, covenanting to return the same to the proper officer on relinquishing their connection with the Association.

Section 5. Every local Pharmaceutical Association shall be entitled to five delegates in the annual meetings, who, if present, become members of the Association, on signing the Constitution, without being ballotted for.

Section 6. Pharmaceutists, Chemists, and other scientific men who may be thought worthy of the distinction, may be elected honorary members upon the same conditions, and under the same rules as appertain to active members. They shall not, however, be required to contribute to the funds, nor shall they be eligible to hold office or to vote at the meetings.

Secteon. 7. Members who have paid their annual contribution for ten successive years shall be considered life members, and exempt from their yearly payments and entitled to a certificate to that effect.

ARTICLE III.—*Of the Officers.*

Section 1. The officers shall be, a President, two or more Vice Presidents, a Recording Secretary, a Corresponding Secretary and a Treasurer, who shall be elected annually, and shall hold office until an election of successors.

Section 2. The President shall preside at the meetings and administer the rules of order usual in deliberative assemblies. He shall nominate all special committees, except a majority of the members present direct a resort to balloting or other means.

He shall sign the certificates of membership, approve all foreign correspondence and countersign orders on the Treasurer.

He shall present at each annual meeting a report of the operations of the Association during the year, with such information pertaining to its condition and prospects and the objects it has in view, together with such suggestions for its future management, as may seem to him proper.

Section 3. In case of the temporary absence or inability of the President, his duties shall devolve on one of the Vice-Presidents in the order of their names.

Section 4. The Recording Secretary shall keep fair and correct minutes of the proceedings of the meetings, and carefully preserve on file all reports, essays and papers of every description received by the Association, copies or abstracts of which shall be furnished for publication as may be required.

He shall furnish the chairman of every special committee with a list of its members and a copy of the minute of its appointment, and shall notify every member of the time and place of each annual meeting. He shall be a member of the Executive Committee.

Section 5. The Corresponding Secretary shall conduct all correspondence directed by the Association, and reply to all communications addressed to it in its recess. He shall from time to time address local associations, members and others possessed of information likely to be of interest to the Association, and report such correspondence to the Committee on the Progress of Pharmacy, of which he shall be a member.

Section 6. The Treasurer shall collect and take charge of the funds of the Association, and shall also hold and issue the certificates of membership. He shall pay no monies unless by the order of the chairman of one of the standing or of a special committee, authorized to appropriate funds of the Association, such order to be countersigned by the President.

He shall present a statement of his accounts at each annual meeting that they may be audited. He shall also report to the Executive Committee previous to each annual meeting, the names of such members as have failed to pay their annual contribution for three years, and also the names of such as have failed to return their certificates of membership after having been officially disconnected with the Association and duly notified to do so.

Article IV.—*Of the Standing Committees.*

Section 1. There shall be two standing committees elected annually—an Executive Committee, and a Committee on the Progress of Pharmacy. They shall each consist of five members, and shall elect their own Chairmen.

Section 2. The Executive Committee, of which the Recording Secretary shall be one of the members, shall have charge of the revision of the roll, the investigation of applications for membership, the election of members in the recess, and the publication of the proceedings. They shall report at each meeting a revised roll of members, with appropriate notices of deceased members, also the names of any who having become disconnected with the Association, refuse to return their certificates of membership as provided by this Constitution.

The annual publication of Proceedings shall contain the corrected roll of members, full minutes of the several sittings, the Reports of the President and of the Committees, together with such addresses, scientific papers, discussions, notices of new processes and preparations as the Executive Committee may deem worthy of insertion. At least one copy shall be furnished each member of the Association.

Section 3. The Committee on the Progress of Pharmacy, of which the Corresponding Secretary shall be one of the members, shall report annually to the Association on the improvements in Chemistry, Practical Pharmacy and the collateral branches, on any new works bearing on these subjects published in this country or in Europe, on the condition of the drug market and the quality of drugs and manufactured articles, whether of foreign or domestic production, found in commerce.

Article V.—*Of the Meetings.*

Section 1. The meetings shall be held annually, or as the Association may from time to time determine, provided that in case of failure of this from any cause, the duty of calling the Association together shall devolve upon the President, or one of the Vice Presidents, with the advice and consent of the Executive Committee.

Section 2. At the opening of each annual meeting, the President, or, in case of his absence, one of the Vice-Presidents, shall call the meeting to order and preside until after an election of officers; in case the President and Vice-Presidents are absent, this duty shall devolve on the chairman of the Executive Committee, or in his absence on any member chosen by vote of those present.

In the absence of the Recording Secretary the President shall appoint a Secretary, pro tempore.

The order of business at the first session of each annual meeting shall be as follows:

1st. The appointment by the President of a committee of three persons to examine credentials, and report the names of those duly accredited.

2d. The Executive Committee shall report the names of new members and of persons present recommended for membership, who shall be immediately balloted for.

3d. The roll of those in attendance, as thus completed, shall be called by the Secretary.

4th. The reports of the standing and special committees shall be read by their titles, or in full, and laid on the table for future consideration.

5th. A committee to nominate officers for the ensuing year shall be appointed, consisting of one nominated by each delegation in attendance and three members appointed by the President, from among those not delegated, to report at the opening of the next session.

The first session shall close with the reading of the President's annual report and referring any portions requiring the action of Committees.

After the first session, the order of business shall be determined by the nature of the subjects presented and by the consent of the majority.

Section 3. During periods fixed by vote for scientific discussion and the exhibition of specimens and processes, the ordinary rules of parliamentary bodies shall be suspended, but at other times shall be enforced by the presiding officer, from whose decisions, however, appeals may be taken if required by five members, and the meeting shall thereupon decide without debate.

A motion reduced to writing and seconded shall be open to discussion, and while it is before the meeting, no motion shall be received unless to amend, divide, commit, to lay on the table, postpone or to adjourn; and a motion to adjourn shall be decided without debate.

On the call of any member, the yeas and nays shall be ordered, when every member shall vote, unless excused by a majority of those present, and the names and manner of voting shall be entered on the Minutes.

Article VI.

This Constitution may be altered or amended by a vote of three-fourths of the members present at any regular meeting, and notice to alter or amend the same shall be given at least one sitting before a vote thereupon.

The hour having arrived for the further reading of papers and examination of specimens, Edward Parrish read an able paper on "Pharmacy as a business," which was directed to be published.

On motion, Dr. Aiken, Prof. of Chemistry, in the University of Maryland, and Examiner of Drugs, of the Port of Baltimore, who was present, was invited to give to the Association, such information as he may possess relative to the inspection of drugs, which was acceded to in the following communication:—

"Having been honored with an invitation to attend the present Meeting of the Pharmaceutical Association, accompanied with an intimation that it would be interesting to the members to learn something of the operation of the law regulating the examination of drugs, as applied at this Port, I have accordingly prepared a brief memorandum, giving the character and amount of the articles rejected during my term of service, with the total weight of all articles of the same classes imported; and lastly, the aggregate of all drugs and medicines introduced during the same time, showing the relative proportion between what has been admitted and what has been rejected. From May, 1853, to the present time, some three years and four months, I have had occasion to reject 40,876 lbs. of various medicinal articles; some directly adulterated; some deficient in active principles, the result of want of judgment in collecting and preparing; some injured by age and exposure; and some by moisture and rough handling in transit. The aggregate amount will hardly seem large if we take into account the long period required to accumulate it. The annual average, contrasted with the whole drug business of our port, will furnish most favorable evidence of the character of our drug market. Within the period named, 760,000 lbs. of Peruvian bark have been brought here, principally from Callao and Arica, some little from Valparaiso, and generally of very superior quality. I have been obliged to reject only 38,062 lbs., and it is but justice to our importers to add, that every pound of rejected bark has been the property of merchants in other places, who found it convenient to order their goods through Baltimore. Within the same period 205,410 lbs. of various roots and seeds have been imported, of which only 367 lbs. have been rejected, and this has been made up principally of ipecacuanha, from Rio, and sarsaparilla from the West Indies, injured by exposure to the water. Of herbs and flowers, 29,890 lbs. have been offered, and only 465 lbs., principally German chamomile, found unfit for use, and that from age. The volatile oils have been found adulterated to a much greater extent. Out of 3,736 lbs. imported, 1,928 lbs., more than one-half, was rejected as deviating too far from the requirements of the law. The oils rejected were principally oil of lemon and oil of juniper, both apparently adulterated with oil of turpentine. Oil of absinth was found diluted with alcohol, and oil of fennel seed with turpentine. If to the articles named we add 50 lbs. of creasote, in-

jured by spontaneous decomposition, and a few pounds of elaterium and lactucarium, badly prepared, we will have the sum total of all the drugs rejected.

Not having access to the records elsewhere, I am unable to furnish any comparative statement in regard to the relative quantity of inferior articles offered here and at other ports. To get a fair statement of the relation between the drugs admitted and those rejected, we need the aggregate amount of all that has been brought into this port since May, 1853. Such statement, to be exactly accurate, would involve more labor than the interest attached to the question seems to warrant; but I can briefly say, that the most important imports, not already enumerated, have been cream of tartar, tartaric acid, carbonate and bi-carbonate of soda, sulphate and carbonate of magnesia, sesqui-carbonate of ammonia, brimstone, borax, cape aloes, calcined magnesia, cantharides, argols and liquorice paste; and that the aggregate weight of these and all other drugs and medicines, not included in the classes already named, would be about 568,624 lbs., making the sum total imported 1,767,660 lbs., and the sum total rejected, as before stated, 40,876 lbs.

There is apparently no room for doubt in regard to the necessity for the Drug Law, and as little room for doubt as to its value in its present form, if properly and uniformly and universally applied. Whether it can be made more efficient, or whether any inconvenience now imposed by it on those engaged in the drug business can be remedied, are legitimate subjects for discussion. Only one instance of apparently deliberate evasion of the law has occurred within my knowledge. This was the work of a merchant residing elsewhere, who accomplished his object by sending his goods, after being rejected here, to a port in the British Provinces, from whence they were returned to one of our Southern ports, where government has no special examiner, and where the party called upon casually to do the duty of such examiner admitted the invoice. This was subsequently identified by a sample sent to me to determine its commercial value, preliminary to adjusting the duties. In conclusion, I may be allowed to add, that only one case of appeal from the decision of the government examiner has occurred here, and in that case his decision was confirmed.

Total weight of Drugs and Medicines imported, and of the same rejected at the Port of Baltimore, from May, 1853, to Sept., 1856.

Peruvian bark,	imported	760,000 lbs.	rejected	38,062 lbs.
Volatile oils,	"	3,736 "	"	1,928 "
Herbs and flowers,	"	29,890 "	"	465 "
Roots and seeds,	"	205,410 "	"	367 "
All other articles,	"	568,624 "	"	54 "
Total		1,767,660 lbs.		40,876 lbs.

WILLIAM E. A. AIKEN,
Special Examiner of Drugs, etc.

Professor Aiken exhibited a variety of specimens collected during his professional duties, and directed attention specially to samples of arrow root from Bermuda and St. Vincent respectively, the former invoiced at 40 cents, the latter at 6 cents per lb., paying an *ad valorem* duty. He was of the opinion that this difference of over 500 per cent. in the duty charged was not in proportion to their value, and thought it should be remedied by marking up the latter.

On motion of C. B. Guthrie, a vote of thanks was tendered to Professor Aiken for his paper, and a copy requested for publication in the proceedings, which was acceded to.

A paper on Beth-root (Trillium pendulum) and its products, was read by Edward S. Wayne.

The same gentleman read a paper on Sanguinaria canadensis, and on sanguinarina and other products from that plant, which possessed considerable interest. Both of these subjects were well illustrated with specimens.

Frederick L. John, of Philadelphia, offered some verbal remarks on a curious phenomenon that had recently occurred in his laboratory. Having occasion to re-distil about fifty pounds of colorless nitric acid, he placed it in his retort, and after the operation was partially effected, he observed violet vapors in the retort, and a sublimate of blackish granular crystals, which on subsequent examination proved to be iodine. Mr. John believes that the source of the iodine was the nitrate of soda used in making the acid originally, but he was at a loss to determine in what condition it existed in the colorless acid, and the cause of its subsequent evolution during the process.

Then adjourned to 4 o'clock this afternoon.

Afternoon Session—Sept. 11*th*, 1856.

The meeting having been called to order by the President, the reading of the minutes of the previous meeting was dispensed with, in view of their general reading at the close of the meeting.

The following gentlemen, proposed as honorary members by the Executive Committee, were elected by ballot, viz: Daniel B. Smith, now of Germantown, late President of the Philadelphia College of Pharmacy; Thomas Farrington, Esq., of Boston,

Massachusetts; M. J. Bailey, M. D., Special Examiner of Drugs at the port of New York.

The following gentlemen, being properly recommended, were elected contributive members, viz: Silas Whitehead, of Lynchburg, Va.; D. S. Dyson, of Washington, D. C.; and Wm. F. Henry, of New York.

The report of the Committee on standards of quality of drugs for the use of Drug Examiners and others, &c., was called up, and after some discussion the following resolution was adopted, and the Committee, as by them requested, discharged from further service.

Resolved, That the Executive Committee be instructed to take all necessary measures that may be required to urge on the attention of the Secretary of the Treasury of the United States, the views of this Association relative to the qualifications necessary for an Examiner of Drugs, should the entrance of a new administration render such action necessary.

A paper was read by E. S. Wayne, on "A process for Elixir of Opium," which, with all the papers previously read, were referred to the Executive Committee, with discretionary powers in reference to their publication.

On motion, the minutes of the Proceedings during the several sittings were now read, and after amendment were adopted.

The Secretary on behalf of the members, strangers in Baltimore, offered the following resolution, which was carried:

Resolved, That the thanks of this Association are hereby tendered to the Maryland College of Pharmacy, and to the druggists and pharmaceutists of Baltimore, generally, for their hospitality during our visit to their beautiful city, and for their liberal and cordial co-operation in the objects of the Association.*

Then on motion adjourned to meet in Philadelphia on the second Tuesday in September, 1857.

W. J. M. GORDON,
Recording Secretary.

* See editorial remarks in the sequel.

ON LEPTANDRA VIRGINICA.

By E. S. Wayne.

Nat. Ord. *Scrophulariacæ.* Sex. Syst. *Diandria Monogynia.*
Culver's Physic. Black Root.

The root of this plant, in its fresh state, is said to be too drastric and uncertain for medicinal use, producing vomiting and bloody stools, dizziness and vertigo, which properties are changed or modified upon drying the root. In the dry state it is laxative, cholagogue and tonic.

This root has acquired some celebrity amongst physicians of the Eclectic school as a laxative and tonic, in small doses, and is said to be valuable in dyspepsia, especially when connected with an inactive condition of the liver, and torpid condition of the bowels; it has also been found useful in dropsy, &c. &c. See American Eclectic Dispensatory.

This root has been only partially examined as to its proximate principles. Essential oil, bitter extractive, tannin, gum and resin have been found, but no principle representing the medicinal properties of the plant or root has been isolated in a pure condition.

The root, in coarse powder, was treated with alcohol in a percolator; a dark brown tincture was obtained; the alcohol was distilled off, and water added as the spirit evaporated; upon cooling, a dark colored resin was precipitated, (the Leptandrin of Merrill;) this was separated from the watery portion by filtration. The filtrate was of a brown color, and of an exceedingly nauseous, bitter taste; to this a solution of sub-acet. of lead was added as long as a precipitate was formed, and the excess of lead removed from the filtrate by sulph. hydrogen. The liquid was of a pale amber color after the treatment. A portion of it when allowed to evaporate spontaneously, left, upon evaporation, a dark colored mass, exceedingly bitter, and presenting no signs of crystallization. Another portion was treated with ether; it left the same bitter substance upon evaporation; and to a third portion ammonia was added; it caused the liquid to assume a darker tint, but after standing several days, no other change was observed to have taken place.

The resin obtained by evaporating the tincture, and the ad-

dition of water, had also a bitter taste, which was removed to a great extent by malaxating it with water. The bitter principle is evidently the active medicinal substance of the root, and all the medicinal value of the resin depends upon the accidental presence of this, which is soluble in water.

Ascertaining, by the former experiment, that water was a solvent of the only active principle of the root, another portion of the root, in coarse powder, was treated with water in a percolator, a dark colored infusion was obtained, having all the bitter taste of the root. To this, sub-acet. of lead was added, the precipitate was separated by filtration, and the excess of lead was removed by the addition of carb. of soda, and the carb. of lead separated by the filter. The pale yellow liquid was then allowed to filter through a column of purified animal charcoal. The liquid that passed through was totally devoid of taste and color. The coal was then washed with water until this commenced to have a bitter taste; it was then dried and treated with boiling alcohol, and the alcoholic solution allowed to evaporate spontaneously; it dried to a dark green mass, no signs of crystallization being observed during the time. This substance had, in a concentrated degree, the same nauseous, bitter taste of the root, that both the tincture and infusion of the root possess, and, upon powdering it, gave a pale green powder.

This powder was again dissolved in water and treated with ether, and allowed to evaporate; a number of needle-shaped crystals were formed, and were floating in the mother liquor, which was of a pale green color. They were separated upon a filter, and the mother liquor placed in the same vessel, and left to evaporate with hope of obtaining another crop of crystals. In this I was disappointed, as it dried up to a transparent, light green mass, in which no crystalline form was present. The crystals and the substance had the same bitter taste. From the above it may be inferred, that the active principle of this root resides in this bitter substance, which is crystallizable, and the presence of coloring matter, &c., prevented the mass of it assuming a crystalline form, and that the medicinal value of the so-called Leptandrin of the Eclectics depends upon the accidental presence of this substance.

From the Proceedings of the American Pharm. Association, Sept., 1856.

PECULIAR ACRID PRINCIPLE OF THE NAT. ORD. TRILLIACEÆ.

By E. S. Wayne.

The plants belonging to the order of Trilliaceæ, comprise an extensive genus of N. American herbaceous perennial plants, which are variously known by the names of wake robin, birth root, Indian balm, lamb's quarter, ground lilly, &c. They have a faint tanner's oil like odor, and when chewed impart an acrid astringent impression in the mouth, causing a flow of saliva, and a sensation of heat in the throat and fauces. Nearly all of the species of this genus are said to be medicinal, and possess analogous properties, the most common of which are T. erythrocarpum, T. grandiflorum, T. sessile, T. erectumand T. nivale, and are consequently most frequently collected. The Trillium pendulum seems to be intended as the officinal plant in the A. E. Dispensatory. But whether the root I have examined is the product of this variety or not, I am not prepared to say. We receive a large quantity of the root from the interior of Kentucky, and have not been able to get any information from those that collect or we receive it from, to enable me to form an opinion to which particular member of the family it belongs. From the similarity of the root, I shquld judge it to be obtained from one and the same plant.

The root, as we receive it, is an oblong rhizome, with numerous rootlets attached to it, and of a yellowish brown color. The acridity of the root seems to reside in the rhizome, as the rootlets have little or none of its acrimony. Upon removing the epidermis of the rhizome with a knife, it presents a white, starchy appearance, and tinct. of iodine added to the cut surface strikes a deep blue color, indicating the presence of starch in abundance. This root has been examined and found to contain volatile oil, gum resin, extractive, tannic acid and starch.

Mr. Merrill has obtained a substance from the root which he calls, I believe, trillin; the process for obtaining which he has not made public, nor have I examined the product.

I was induced to examine this root from its exceedingly acrid taste, resembling that of senega somewhat when chewed, with the expectation of finding in it some principle analogous to senegin.

The root, in coarse powder, was treated with alcohol in a displacer and the tincture evaporated, and water added as the alcohol distilled away. Upon cooling, a very fluid oleo-resin was found floating upon the top of the watery portion, of a light brown color, possessing all the peculiar oil-like odor of the root, but not the acrid taste. This was separated from the watery portion by a separating funnel.

The watery portion was acrid to the taste; to it both acetate and sub-acetate of lead was added as long as a precipitate was produced, then filtered from the lead precipitate, and the excess of lead removed by the careful addition of sulph. acid.

I was surprised to find, upon tasting the clear filtrate, that its acrid taste had not been in the least diminished by the addition of the lead salts, and satisfying me that the acrid principle was a very different substance from that of senega. This filtrate was then set aside until next day, for further examination. Upon looking at it next day, I observed that a gelatinous precipitate had formed, and that the supernatant fluid had entirely lost its previous acrid taste. The precipitate was collected upon a filter and washed with water; this was troublesome, from the nature of the precipitate, and had to be very cautiously done, as I found that it was again taken up by the wash water. It was then allowed to become almost dry upon the filter, then detached from it, re-dissolved in dilute alcohol and left to spontaneous evaporation. It dried to a white, amorphous mass, easily powdered, and had all the acrid taste of the root in a concentrated degree. I subsequently tried its solubility in alcohol; it dissolved completely, and was then evaporated to a certain extent, spread out with a brush on glass, which, upon drying, was easily detached in glistening scales. This substance, like saponin and senegin, has the peculiar property of forming with water frothing soap-like mixtures. Half a grain of this to two ounces of water, is sufficient to develope this peculiarity, and the foam formed upon the water will remain unbroken for several days.

To ascertain whether this substance was the result of oxidation of the oil obtained in the first treatment, it was submitted to oxidizing operations. A portion of the oil assumed a changed appearance by the treatment; became a white substance, which

was separated by the filter, which I have saved for further examination. The oxydized oil, however, gave no indication of yielding a substance similar to the acrid principle mentioned.

WINE OF COLCHICUM SEEDS.

To the Editor of the American Journal of Pharmacy:

DEAR SIR,—With regard to a question asked by a correspondent from Portland, Me., on page 397 of this Journal, concerning the best method to reduce colchicum seed to powder, you will permit me to say a few words. Drying them well and bruising them in small quantities under a heavy pestle in an iron mortar, is the way usually followed on the continent of Europe; or else they are ground in a sharp coffee mill, a small number only being put in at a time. It cannot be denied that the operation of reducing these seeds to a bruised condition is among the most tedious and laborious the pharmaceutist has to perform; a method, therefore, which will save *some* time and labor will be welcome to him.

In preparing the wine of colchicum seed, I have adopted the following way for some time past, and always with a satisfactory result: I put the whole seed in a bottle together with about one-third or one-fourth of the required quantity of wine, and mark the level of this mixture with a strip of paper. After macerating the seeds for two or three days, I empty the bottle into a suitable vessel, decant the liquid and bruise the seeds in a clean iron mortar, throwing in not more than one or two tea-spoonfuls at a time. The maceration softens the seeds somewhat, sufficiently to allow them to be mashed with some exertion. Proper care must be taken in this manipulation to avoid a loss of the seeds or the liquor. When well bruised in this way, they are put back into the bottle with the liquid, and wine added to make up the deficiency occasioned by evaporation. With the remaining two-thirds or three-fourths of the wine, all the vessels and instruments used ought to be well washed, the wine then added and the preparation completed according to directions. By following this way I have succeeded, with patience and unwearied labor, to bruise six ounces of the seeds in hardly more than two hours, which I think is quite a satisfactory result.

Yours, very respectfully, J. M. MAISCH.

Philadelphia, Oct. 1856.

ON A NEW PROCESS FOR DOVER'S POWDER.

Louisville, August 26th, 1856.

MR. WM. PROCTER, JR. :—*Dear Sir*,—I have taken the liberty of enclosing to you a sample of Dover's powder, made in a different way from any process I have ever seen. It may not be new to you, but I always make it in the way I propose, and the result has always been satisfactory. The greatest difficulty I met with in making this compound before I adopted the present, was in reducing the sulphate of potash to a fine powder. This I obviated at once by dissolving the salt in boiling water to perfect saturation, and by the addition of alcohol I precipitate the salt in a highly divided state, which is readily mixed with the opium and ipecac. I enclose you a sample for your examination. This is not meant as a communication, but act as you think proper.*

Very respectfully, your obed'nt serv'nt,

T. H. TANNEHILL.

ON PILLS OF IODIDE OF IRON.

Memphis, Tenn., Sept. 11th, 1856.

To the Editor of the American Journal of Pharmacy :—

DEAR SIR,—In the last (July) number of the Medico-Chirurgical Review, I observed the following paragraph :—

"M. Perrens proposes the preparation of pills of the iodide of iron ac-

*[NOTE.—The U. S. Pharmacopœia, in directing the sulphate of potassa to be in crystals, designs it to act as a more effectual means of thoroughly dividing the opium and ipecacuanha, which are thus reduced to the finest condition by the amount of attrition necessary to reduce the sulphate to a powder of sufficient fineness, and thus *insures* the requisite trituration. This is the more important as it is too much the custom to have the sulphate ground to a powder, and simply mix the three ingredients. This is a pharmacopœial precaution, analogous to that of directing *powdered* opium to make laudanum, it being presumed that dry opium is thus insured if the directions are followed. But *dry* opium will answer equally well if properly broken up; and so also powdered sulphate of potash may be used with equal propriety, if the requisite amount of trituration is subsequently bestowed to reduce the whole to a homogeneous powder. A specimen of the Dover's powder received from the author, made by the above process, is quite unexceptionable, and equal to any we have seen.—EDITOR AMER. JOUR. PHARM.]

cording to the following formula: Take of iodine, 1 gramme, powder of iron (not oxidized) 1 gramme, honey 1 gramme, liquorice powder 2 grammes. Rub together in an iron mortar the iodine and the powder of iron until they are completely mixed, then add the honey and beat it till the mass becomes black and ceases to exhale an odor of iodine, then incorporate the liquorice powder with it and divide rapidly into twenty-five pills. Silver them and preserve in a stoppered bottle, as they are slightly deliquescent. The presence of an excess of iron preserves the iodide for an indefinite period from the oxidating influence of the air."

My object in calling your attention to this paragraph is to suggest to your recollection a communication of my own in the Jan. number of the Journal Pharmacy, for 1854, presenting the formula for a preparation precisely similar, not as a *proposed* method, but as having been long used in my own practice and that of several Memphis physicians, to whom I had communicated it. The proposal of M. Perrens appeared in the French Bulletin Gen. de Therap., for March, 1855, while my communication appeared in your Journal in Jan., 1854, more than a year in advance of the French Pharmacien. Should you think it worth while to dispute precedence with the Bulletin, this note is at your service; but in any case I would mention, that if the pills are prepared with any viscid vegetable extract as an adjuvant, as in my formula, the silvering of the pills to prevent deliquescence is quite unnecessary, provided a sufficient quantity of dry liquorice powder be kept with them, for incipient liquefaction in that case renders the pills sufficiently adhesive to attract a small portion of the powder which arrests the process. With this precaution alone I have kept the pills in an ordinary paper pill box for three weeks uninjured. You will observe also that the reason which M. Perrens gives for an excess of iron was also anticipated by me.

Respectfully, your obed'nt serv'nt,

DANIEL F. WRIGHT, M. D.
Prof. of Physiology and Pathology in the Medical College,
Memphis, Tenn.

REMARKS ON BOUTIGNY'S METHOD OF PREPARING PROTIODIDE OF MERCURY.

By Charles Bullock.

The Pharmacopœia of the United States directs proto-iodide of mercury to be prepared by direct combination of its elements. When thus prepared, it soon loses its original green hue, passing to that of an ochry yellow. This change occurs equally when the salt is exposed to light, or when protected from it. Whether the chemical or therapeutical character of the salt is affected by this change I have not been able to determine. It has been our custom not to dispense it after it assumed the yellow tinge. In order to obtain a proto-iodide which would not be liable to this change, I was induced to try the formula recommended by M. Boutigny, as described in the 8th vol. of this Journal, p. 326. Its preparation is here recommended by double decomposition between iodide of potassium and calomel. A specimen made after this process retained its original green hue for a long time. Pleased with the result, I essayed its manufacture on a larger scale, when some unexpected results were obtained. Fifteen ounces of iodide of potassium in powder, and twenty-one and three-eighth ounces of calomel, were used. These are the proportions of M. Boutigny, and are nearly those of the atomic weights of the two salts. The iodide of potassium and calomel were rubbed together. On the addition of hot water, large globules of mercury made their appearance. The water decanted from the proto-iodide was examined, and found to contain mercury in solution. A drop placed on light copper foil did not give a mercurial stain till a fragment of iodide of potassium was added. Supposing some biniodide of mercury might have been formed during the process, and dissolved by the chloride of potassium present, a small quantity was allowed to evaporate in a watch glass, no bin-iodide was deposited, but crystals resembling iodo-hydrargyrate of potassium. A solution of iodide of potassium added to the mother water produced no change, while a solution of bi-chloride of mercury produced a copious red precipitate. In this way I obtained six and one-fourth ounces of bin-iodide of mercury from the washings.

How are we to account these results? can we suppose that one portion of the calomel parted with its chlorine to another portion, converting it into bi-chloride, and leaving metallic mercury, thus giving formation to bin-iodide of mercury? This reaction would, of course, leave an excess of iodide of potassium in the solution of which the bin-iodide of mercury would be formed That the changes which occurred left a large portion of iodide of potassium uncombined, is evident from the amount of bin-iodide of mercury obtained by adding corrosive sublimate to the washings; and this, notwithstanding a slight excess of calomel, was used. I was unable to determine accurately the amount of proto-iodide of mercury, as it was so contaminated with the metal.

Philadelphia, Oct. 7th, 1856.

ON ADULTERATED POWDERED ASSAFETIDA.

By Joseph F. Heathcote.

This sample was supplied by a drug house doing an extensive business in powdered drugs in this city, and the cause of the examination was from the smallness of bulk and great weight, neither of which occur in the genuine article.

It was proposed to examine and determine, if possible, how the adulteration was committed, accordingly 2 drachms, or 120 grs. were digested without any other substance (which was easily shaken up and divided by its composition) in 95 per cent. alcohol, several exhaustions took place during 6 or 8 days, finally boiling alcohol was used; all the tincture was carefully evaporated to the consistence of ext. jalapæ, the soluble matter was then weighed, and out of 2 drachms only 14 to 15 per cent. was left in the evaporating dish.

The substance remaining in the filter was again washed and dried, and there was found over 100 grains of a greyish substance, rather heavy and gritty, but polishing copper or silver with great ease. It showed no effervescence with sulphuric acid, and was not altered by the blowpipe.

It is a question with many practical and successful physicians whether such articles as assafetida should be submitted to the

process of drying for powdering, but if so it will be well for prescribers to be certain that they are not defrauded of the article they order.

FLUID EXTRACT OF ERGOT.

To the Editor of the American Journal of Pharmacy.

DEAR SIR:—While located in your city, I was requested by Dr. Ellerslie Wallace to prepare a concentrated fluid preparation of ergot, which would be reliable and combine smallness of dose with the desirable property of not undergoing change by keeping. The following preparation having upon trial successfully answered these requirements, I present it to your notice, that you may, if you think proper, give it a place in the Journal of Pharmacy.

The oil of ergot does not enter into the composition of this preparation as I believe it to be inert, and its virtue as prepared (with ether) to be due entirely to some principle extracted along with it by the menstruum. With the above in consideration, the following process was pursued in making this preparation, which I have called

Fluid Extract of Ergot.

℞. Freshly powdered ergot,	4 oz. (troy)
Diluted alcohol, made by mixing one part of 95 per cent. alcohol, with four parts of water, ...	one pint.
Water, ...	sufficient quantity.
Alcohol, ...	6 fluid ozs.

Macerate the ergot in the diluted alcohol for four days, then transfer to a percolator, and when the liquid ceases to pass, pour on water until two pints have come through; by means of a water bath evaporate to six fluid ounces, to this add the alcohol and mix; let it stand with occasional agitation for twelve hours, and filter. When finished it is of a dark Maderia wine color, possessing a strong odor and taste of ergot. One fluid drachm or a teaspoonful of this fluid extract represents one scruple of ergot.

This preparation has been fully tested with satisfactory results, by Dr. Ellerslie Wallace, of your city, and Drs. J. G. Clark and H. R. Harrison, of Staten Island, and in hopes that it might be of service to others of the profession, I submit it for trial. Very truly, yours, W. J. WATSON.

North Shore, Staten Island, September 15th, 1856.

ACTION OF OIL OF SASSAFRAS UPON METALLIC VESSELS, PARTICULARLY THOSE WHERE LEAD HAS BEEN USED AS A SOLDER, AND AN OBSERVED COMPOUND RESULTING FROM THESE CONTAINING LEAD.

By E. S. Wayne.

Having placed a quantity of oil of sassafras, which, at the time, was of a light straw color, in a copper can, (such as the oils of lemon and bergamot are imported in,) and a short time after, having my attention called to a portion of oil taken from the same, I was much astonished at the singular change which had taken place in it. The oil had changed from a light straw to a deep inky looking fluid. I at first suspected that something which might have been in the bottle had caused the change, but upon examining the oil in the can, I found it in the same condition. Upon holding the bottle up to a strong light, the oil appeared to be full of dark particles suspended through it. I was at a loss to account for the change which had taken place, as there was no foreign substance in the can which could have produced it, as it had been thoroughly cleansed and dried before the oil was placed in it, and consequently could form no other conjecture, save that the copper can had been the cause of the difficulty.

I found that the black particles mentioned were easily separated from the oil by filtration. The filtrate was not perceptibly darker than the original oil. It was tested for the presence of copper, but gave no indication of its presence.

The black mass separated by the filter was then removed, and deprived of the remainder of the oil present by absorbents. I could not rid it perfectly by this process. It was again placed upon the filter and treated with ether (in which the black substance was insoluble,) as long as it took up a sensible trace of oil.

It was, after drying, of a light slate color, and possessed a slight taste and smell of sassafras, and was insoluble in alcohol. A portion of it was incinerated upon a platina foil; it produced a voluminous smoke and left a small amount of cinder, which, upon urging the heat by the blowpipe, consumed only partially. Upon examining it with a lens, small metallic globules were visible, and when attempting to remove the residue from the foil, it

became evident that the globules were reduced lead, and that a portion of them had become amalgamated with the foil.

A larger portion was then placed upon charcoal and ignited, and the reduced metal dissolved in nitric acid, and tested for copper, tin, and lead. Lead only was found.

Another portion was heated in a glass tube, and the fumes condensed in the cool portion. It had a slight sassafras odor, and was acid to test paper. It was evidently a pyro-product.

It is evident, from the above, that sassafras oil has the property of forming a compound with lead. The question now arises, from whence came it? Did it come from the apparatus that oil was prepared in, or did it take it from the original tin can, (from the solder)?

Upon examining the copper can, the joint near the top contains a large portion of lead solder, exposed to the action of the oil. In the tin can the solder is upon the outside; and, as the oil was not colored in the tin can, the inferences are, that the lead was obtained from the joint in the copper can, which compound was insoluble in the oil itself, and was suspended in it, causing the dark color.

The oil filtered from the precipitate I have not examined as to whether any change had taken place in it, merely testing it for the presence of copper.

ON A NEW PROXIMATE PRINCIPLE FROM THE SANGUINARIA CANADENSIS.

By Edward S. Wayne.

The Sanguinaria Canadensis, it is well known, contains an alkaloid, sanguinarina, identical, in its ultimate analysis, with chelerythrin, the alkaloid of the Chelidonium majus, and forming like it red salts with acids, and possessing very acrid narcotic properties.

The Chelidonium has been very accurately examined, as to its proximate principles, but the Sanguinaria, I believe, has been investigated no further than the obtaining of its alkaloid. I was led into some further investigation of this substance accidentally. Having occasion to prepare a quantity of its basic principle, I adopted the process for its extraction published by

Dr. Sheil, of St. Louis, in Silliman's Journal, also, in the American Journal of Pharmacy, which is as follows: Treat the coarse powdered root with dilute sulph. acid in a percolator, and precipitate the obtained liquor with aqua ammonia, the addition of which causes a voluminous precipitate of a deep purple color, which is washed with water upon the filter, dried and treated with ether, which dissolves out the Sanguinarina; this solution is to be treated with animal coal, which removes most of the accidental coloring matter, and the alkaloid is obtained as a sulphate from this ethereal solution, by a solution of sulphuric acid in ether, of a bright vermillion color, the salts of Sanguinarina being insoluble in ether.

I observed, after having precipitated all the Sanguinarina, that there was some other substance held in solution by the ether; it was of much deeper color, and left a yellowish solid deposit upon the sides of the vessel containing it.

The ether was left to evaporate spontaneously. A substance having a dark red color, and without any distinct crystalline form, was left. From its acrid taste it evidently contained a portion of Sanguinarina; I tried a number of methods to rid it of its presence without success. At last I dissolved the whole of it in ether, and agitated it with dilute sulph. acid, which removed the Sanguinarina completely. The ethereal portion was separated from the acid and allowed to evaporate spontaneously; a dark red mass was left; translucent, but could distinguish no crystalline form. It was placed in a mortar, and upon powdering it, gave a dull red powder, tasteless, insoluble in water. Upon heating it with water it melted and formed a dark, brittle, resinous mass.

This was dissolved in alcohol and treated with animal charcoal; the color of the solution after this treatment was of a pale yellow tint. It was treated a second time with the coal, but no change in the color of the solution was perceptible; this was evaporated spontaneously, and left a pale red mass.

This mass was dissolved in boiling alcohol, and to the solution hydrochloric acid was added; the addition produced a deep red color. This was set aside to cool, and deposited the excess of the acid compound in beautiful needle-shaped crystals of a bright red color.

With sulphuric acid it forms a confused warty mass of crystals,

which rub to a bright red powder. From its acid combinations it is precipitated of a pale yellow color, which, dried, has a pale red tint.

The quantity obtained from the ethereal solution from which the sanguinarina had been obtained, being very little, the original precipitate was treated with alcohol in a displacer—a deep red tincture was obtained. To this water was added, which caused a precipitate; this was collected on a filter, dried, and found upon examination to be the substance sought. The quantity of it existing in the root is but small, as I obtained, from fifteen pounds of the root operated upon, 130 grains of this substance.

The dark substance left after extracting the Sanguinarina and the last mentioned body, possesses strong tinctorial properties. It is soluble in acids, producing a dark red compound, and is precipitated unaltered by the addition of an alkali. I have not examined it further.

From the examination of this root it is evident that its acrid and pungent taste is due entirely to a salt of Sanguinarina, probably a chelidonate, which acid (chelidonic) I have obtained from this root, the other two substances mentioned having but little taste, and this may be due to the accidental presence of a trace of the alkaloid.

The red color of the root, and red color of its tincture and other fluid preparations is not due entirely to the Sanguinarina, as all the other products have strong tinctorial properties, and forming with acids deep red solutions.

EXTRACTUM UVÆ URSI ET LUPULINÆ FLUIDUM.

By The Editor.

Dr. W. T. Howard, of North Carolina, having occasion for a preparation which should combine the activity of the two remedies indicated in the title, suggested that they might be prepared in the form of a fluid extract. To effect this the following formula was adopted, viz:—

Take of Uva Ursi, in coarse powder, 8 ounces (Troy)
Lupulin, 21½ drachms "
White sugar, 8 ounces "
Alcohol and water, of each sufficient quantity.

Macerate the uva ursi in a mixture of one part of alcohol and four of water for 24 hours, and then displace slowly with the same menstruum until two pints of liquid have passed. Put the lupulin in a small glass percolator, and slowly add alcohol (sp. gr. 835) until a pint of tincture has passed. Evaporate the first liquid in a water bath to ten fluid ounces, add the sugar and then, having previously carefully evaporated the tincture of lupulin to four fluid ounces in a water bath of 150° F., add it to the syrup of uva ursi; mix them well together. Now continue the heat of the water bath until the whole measures a pint, and strain whilst hot.

Nearly the whole of the soluble matter of the lupulin will be retained. The preparation has a dark brown color, and a well marked taste of the two ingredients.

Dr. Howard employs this fluid extract for an irritable condition of the bladder where fluid extract of buchu was found too stimulating.

GLEANINGS—CHEMICAL AND PHYSIOLOGICAL.

English Oak Galls.—Dr. Vinen (Journal of the Linæan Society) states that galls from the English oak are used in Devonshire for making ink. Having been requested to ascertain their tannic value, he found them to contain but 17 per cent. of tannic and gallic acids, whilst a comparative trial with ordinary galls yielded 56 per cent. Dr. Vinen attributes this small per centage to the fact that all the galls had been perforated by the *cynips* previously, and that he believed if collected at an earlier period before the escape of the fly, the per centage would be found larger.

The assimilative qualities of various Fatty Bodies.—M. Berthe, (Comptes Rendus, May 12, 1856) in a series of experiments on fixed oils, has ascertained that they vary considerably in their capability of assimilation when taken into the stomach. He tried butter, olive, poppy, almond and whale oils, English cod-liver oil and pure brown cod-liver oil. Each of these were administered to one man in good health and under a regular diet, in doses increasing from one to two fluid ounces daily. By exact daily determination of the quantity of oil in the feces, he ascertained the time requisite to arrive at complete saturation, when the whole of the fatty body was excreted. It was twelve days

for the poppy, almond and olive oils; about a month for the butter, whale oil and decolorized English cod-liver oil, and a *month's use of the brown cod-liver oil caused no perceptible increase in the fatty matter of the excrement.* He therefore divides the fatty bodies into three classes: 1st, the difficultly assimilable, (vegetable oils.) 2d, the assimilable, as butter, whale oil, &c. 3d, very assimilable, brown cod liver oil.—*Chemist.*

Detection of Picric Acid in Beer.—M. Pohl, of Vienna, states that carbazotic (picric) acid may be detected in beer, when in the proportion of one-eight millionth, by boiling a little very white wool, unmordanted, in the suspected beer for six or eight minutes, when, if present, the wool contracts a more or less deep canary yellow color.—*Chemist.*

New Process for Arresting the Escape of Corrosive Vapors from Chimnies.—By M. TESSIER.—The process consists essentially in causing the gases from the manufactory to pass through an oven containing lime, or its carbonate heated to a temperature favorable to the absorption of the gases, before they can pass into the chimney. Hydrochloric acid and corrosive chlorides are thus arrested in the author's aluminium works, near Rouen.—*Chemist.*

Chrysophanic Acid.—M. Rochleder has extracted chrysophanic acid, C^{20} H^{8} O^{6}, identical with rheine, from wall lichen (Parmelia parietina) or from rhubarb, by the following process :—

These substance are exhausted by weak alcohol, with the addition of a small quantity of caustic potassa. It is strained through a cloth with pressure, filtered, and a current of washed carbonic acid passed through the solution. A precipitate is formed, which is collected and dissolved in spirits of wine, at 122° F., to which a little potassa has been added. The solution is filtered and precipitated with acetic acid, the precipitate redissolved in boiling alcohol, mixed with water and filtered, when the liquid deposits chrysophanic acid in yellow flocks, which may be obtained in crystals from alcohol.—*Jour. fur Prac. Chem.*

ON IODISED OIL. By M. HUGOUNENQ.

Various processes have been proposed for the preparation of iodised oil.

The first, published by M. Personne, consists in passing a

current of steam into a mixture of oil and iodine, to cause a combination of the metalloid with the fatty matter.

It has been said that this method of operating is apt to cause the formation of hydriodic acd; this is true.

The second process, that of M. Berthé consists in dividing the iodine in a mortar, adding the oil, introducing the mixture into a flask, which is heated on a sand bath until decolored; the operation is easily performed, and the iodised oil rarely contains hydriodic acid, but in avoiding this misfortune, we fall into another which is quite as serious; indeed, however quickly the combination may take place, it still requires an hour, and a temperature of 80° C. (176° F.) Oil of almonds exposed to this temperature, acquires the property of very quickly becoming rancid.

Another chemist has advised the dissolving the iodine in ether, so as to hasten its combination with oil of sweet almonds; this end is attained on the condition of leaving in the iodised oil the greater part of the ether, for if we wish to remove all the ether, it must be powerfully heated, and for a long time; a temperature of 90° C. (194° F.) continued for three hours, will not suffice to remove the odor of the ether from iodised oil thus prepared.

Having been struck with these serious drawbacks, and considering the influence which solar light has on many compounds of iodine, I determined to make some experiments for the purpose of ascertaining whether the combination of iodine with oil of sweet almonds would not take place under the influence of the solar rays, and I have been perfectly successful.

The following is the very simple method which I used:—

Iodine,	2·50 grs.
Oil of almonds,	500.00 "

The iodine is pulverised in a porcelain mortar with 3 or 5 grammes of oil; after 5 or 6 minutes trituration, the remainder of the oil is added by degrees, and a perfectly limpid liquor is obtained, of a red color, which is only a solution of the iodine in the fatty body, but it is a complete solution. This solution, when exposed for 15 minutes to the solar rays, is perfectly decolored.

The iodised oil thus prepared has the odor and taste of pure oil of almonds; it does not become rancid more quickly than that oil, and contains no hydriodic acid.

I felt disposed to think that the combination was due to the heat

of the solar rays, rather than to a special action of the light; but it was not difficult to ascertain that this heat alone would not have produced the phenomenon, especially in so short a time; a solution of iodine in oil, which was kept for four hours at a temperature of 32° C. (89° 6′ F.), had lost none of its red color.

It sometimes happens that iodised oil will resume its red color, when kept in the dark or in diffused light; but a fresh exposure to direct light decolors it again very quickly.—*London Chemist, from Journal de Pharmacie et de Chimie.*

ON THE ACTION OF THE VEGETABLE ACIDS ON CALOMEL.

By M. Bauwens.

The most enlightened physicians, the greatest chemists, and most prudent pharmaceutists, on the faith of tradition, always advise patients not to take any acid substances when calomel has been administered to them. M. Bauwens has made some investigations on this subject, and has obtained the following results.

At the ordinary temperature, at 86°, and even 104° F. (30° and 40° C.) calomel, in prolonged contact with a concentrated solution of tartaric or citric acid, gave no trace of corrosive sublimate.

Calomel, which is insoluble in water, alcohol and ether does not instantly communicate to the tongue the styptic flavor of the soluble preparations of mercury; but this taste is perceived when the alkaline haloid salts of the saliva come in contact with it, in consequence of the property possessed by alkaline salts of dissolving the mineral haloid salts to form double salts with them.

Calomel appears to owe its anthelmintic and purgative properties to the haloid salts which it finds in the economy. If large doses of calomel act relatively less powerful than small ones, it is because in the first case the mercurial salt does not find in the economy a sufficiency of alkaline salt to convert it all into soluble salt; whereas, in the second case there are sufficient alkaline salts in the intestinal canal to dissolve the mercurial salt completely. Consequently children who seldom take much chloride of sodium, can take more calomel in proportion than grown people. The physicians of sea-side towns, where the water is brackish, seldom prescribe calomel, and the doctors of the fleet have been obliged to abstain from giving it to sailors who eat salt meat.

Hydrochloric acid has not the property of uniting immediately with calomel, or to cause it to pass from the state of proto- to that of deuto-chloride, because the affinity of chlorine for hydrogen (reduction of the chloride of silver by means of nascent hydrogen) exceeds its affinity for mercury. Still its employment should not be advised with calomel, because combining with the alkaline substances in the body, it passes to the state of chloride, whose action we have already described.

The extreme ease with which the mercurial chloride is converted into a soluble salt under the influence of so many chemical agents, renders great prudence necessary on the part of the physician.

Corrosive sublimate dissolved in syrup, does not deposit calomel for twenty-four hours. The saccharolate had not lost its clearness after four days, nor deposited the least precipitate, after having been exposed to a temperature varying from 86° to 140° F. (30° to 60° C.) After boiling for some time, the syrup becomes turbid and deposits proto-chloride. The saccharine solution, already more or less decomposed by the partial carbonization of the sugar, yielded a further quantity of deutochloride to sulphuric ether, which proves that the sugar which is generally added to calomel is rather employed to give a pleasant flavor to the medicament, than to convert into protochloride the traces of deutochloride, which the calomel might possibly contain, as is the general opinion.

Animal albumen, which is generally recommended to neutralise the effect of deutochloride of mercury does not possess this quality to the extent that might be desired. M. Orfila, who first recommended albuminous water in poisoning by corrosive sublimate, advises giving enough to decompose the whole, but not to give too much, so that an excess might not redissolve the sparingly soluble compound, which this mercurial chloride forms with the albumen, and thus restores to it a portion of its poisonous qualities.

In poisoning by the soluble salts of mercury, we think that the preference as an antidote should be given to substances which the digestive functions will not alter, such as hydrated protosulphuret of iron, advised by M. Mialhe, tannate of potassa and iron filings themselves.—*London Chemist, August*, 1856, *from Annales de la Société de Médicine de Gand*, May, 1856.

ON CHLOROFORM.

Bremon gives the following reactions by which the impurities of chloroform are determined. It boils at 45° C.; at all temperatures it is very volatile; it does not produce so strong a sensation of cold as ether in its evaporation from the hand. Entirely free from alcohol and water, it should have, at least, a specific gravity 1.494 at 15° C. Potassium does not decompose it, the surface of the metal being only covered with small gas bubbles, but when alcohol is present, the entire mixture becomes quite colored, attended with the liberation of sharp acid fumes. On the addition of 1 to 5 per cent. of 90 per cent. alcohol, it becomes cloudy, and it only regains its transparency when 10 per cent. is added. Pure chloroform on being shaken with a small portion of bi-chromate of potash, sulphuric acid and water, and allowed to remain quietly for a time, assumes a light greenish yellow color; the presence of 5 per cent. of alcohol is immediately detected, the mixture separating in two sharply divided layers, the lowest of which being of a green color. The same occurs when ether is present. By the addition of water, the specific gravity of chloroform can be reduced to 1.40; potassium in such chloroform is rapidly oxidized.

Alcohol, the most common adulterating menstruum, lowers the specific gravity in the following proportions:

Vol. of Alcohol.	S. G.	Vol. of Alcohol.	S. G.
0	1.4945	5	1.4772
1	1.4908	10	1.4602
2	1.4874	20	1.4272
3	1.4845	25	1.4090

S. S. GARRIGUES.

ON THE ACTION OF PHOSPHATE OF SODA ON FLUOR SPAR.

By H. BRIEGLEB.

Combinations of fluorine will certainly become of technical importance; their mode of preparation is at present so very difficult, and they can be made only in such small quantities at a time, that the author was induced to experiment on the changes which take place at an elevated temperature, between phosphate of soda and fluoride of calcium, hoping to arrive thus at a practical method for obtaining fluoride of sodium.

It was calculated that $2NaO, PO_5 + NaO, CO_2 + 3CaF$ would produce $3CaO, PO_5 + 3NaF$.

Accordingly the ordinary phosphate was converted into the pyrophosphate at a red heat, and after the mixture of the different substances, heat was carefully applied to expel the carbonic acid, and, afterwards, to melt the mass, which wants frequent stirring with a clay rod. After cooling on an iron plate, the mass contained crystals of apatit, which have been observed by Manross, in 1851. The mass was boiled with water in a silver dish, the solution contained, besides fluoride of sodium, much phosphate of soda. The crystals of the fluoride were skimmed off during evaporation, and purified by repeated washing and recrystallization. An analysis showed them to be pure, but the yield was too much below the calculated amount, and the operation too tedious.

An alteration of the mixture to $CaO + 2CaF + 2NaO, PO_5$, thus hoping to obtain 2NaF and $3CaO, PO_5$, had a rather less favorable result, and formed the same crystals of apatit: $3\ (3CaO, PO_5) + CaF$. To obtain this, instead of phosphate of lime, an addition of $\frac{1}{3}$ CaF to the first mixture was made, which, however, proved to be only a little more favorable.

Phosphate of potassa substituted for the soda salt yielded so little fluoride of potassium that it could not be obtained pure.

If the above melted mass, instead of being boiled, is extracted by water in a water bath, and the filtered liquor concentrated in it, on cooling, clear crystals, regular octohedrons, are formed, which are hard, and of a nauseous alkaline taste; their spec. grav. at 25° C., (77° F.) is 2.2165; at 25° C. their saturated solution weighes 1.0329, and contains 1 part of the salt in 8.31 water; when saturated at 70° C. (158°F.) 1 part is dissolved in 1.74 water, and has a spec. grav. of 1.1091. The analysis proved it to be of the following composition: $3NaO, PO_5 + NaF + 24HO$. Boiling of the solution decomposes it, separating fluoride of sodium.

The same salt is obtained by digesting finely pulverized kryolith of Greenland, $(3NaF + Al_2F_3)$ in a solution of phosphate of soda with caustic soda; and by evaporating a mixture of the solutions of the medicinal phosphate of soda, caustic soda and fluoride of sodium. Soda, in this double salt, cannot be sub-

stituted by either potassa or ammonia, and chloride of sodium cannot replace the fluoride; but a double salt may be obtained of the formula $3NaO, AsO_5 + NaF + 24HO$, which is isomorphous with the above.—J. M. MAISCH.

Ann. d. Chem. & Pharm., Jan. 1856.

ON PARAFFIN.

By FRANS. FILIPUZZI.

Professor Redtenbacher had received from Messrs. White, Young & Co., in Glasgow, a sort of paraffin, prepared from a bituminous slate; it was analysed by the author.

The paraffin was white, crystalline, of a fatty lustre, devoid of taste and smell; spec. grav. 0.861 at 15°C., melting point 55°C. It was wholly dissolved by boiling alcohol, separating on cooling in crystalline masses, which, under the microscope, showed three different shapes: felt-like needles, angular grains, and scales with mother of pearl lustre. From the concentrated mother liquor only, the last mentioned scales separated, which, on repeatedly dissolving and separating them, did not alter their appearance or their melting point, which was at 45°C.

The first mixed crystalline mass was dissolved in alcohol; on cooling, pearly scales of 48°C. melting point were obtained; on farther evaporation, the needles intermixed with those angular grains were gained, which could not be separated. By manipulating in this way, nine different specimens were obtained, each varying in the melting point as follows:

1	2	3	4	5	6	7	8	9
45°	48°	49°	49.5°	51°	56.5°	57°	57.5	58°C.

The elementary analysis of some of these specimens show them to be composed of isomorphous or polymorphous carburetted hydrogen. The results are—

	45°	49.5	56.5°	57.5°	58° melt. pt.
C	85.47	85.53	85.72	85.77	85.69
H	14.29	14.23	14.31	14.21	14.29

By treating it with concentrated nitric acid for several days, paraffin was entirely dissolved, and the solution on diluting with water was scarcely rendered turbid. On distilling, a volatile fat

acid was obtained, which, combined with potassa and treated with sulphuric acid and alcohol, had the smell of butyric ether. The quantity, however, was too small for making a butyrate sufficient for analysis; only butyrate of oxide of ethyle, with its characteristic properties, was obtained.

The remaining acid liquid left a mass on evaporation, which, on dissolving in a little water and evaporating, gave crystals of succinic acid, the silver salt of which was made and analysed.

The author comes to the conclusion, that paraffin is a derivate of fat bodies, formed by a process of reduction.—J. M. M.

Erdman's Jour. 1856, *from Sitzungeber d. Wiener Akad. July*, 1855.

CONTRIBUTIONS TO TOXICOLOGY.

Translated from Buchner's N. Repertorium and Archiv d. Pharmacie by J. M. Maisch.

On the Inhalation of Sulphuret of Carbon in Caoutchouc Factories.

In the Paris Académie de Médecine, Delpech read, on January 15th, a notice on the diseases to which workingmen in caoutchouc factories are subject, and which have not yet been described. From his observations Delpech comes to the following conclusions:

1. That those workingmen are subject to severe indispositions, consisting of—

a. Disturbance in digestion; anorexia, nausea, vomiting, diarrhœa, constipation.

b. Disorders of intelligence; stupidity, loss of memory, extraordinary irritability, unaccountable passion.

c. Severe disorders in the functions of the nervous system; headache, vertigo, disturbances in seeing and hearing, impotency, palsy, especially that of motion.

2. That the observance of the above disorders, together with the experiments on animals, permit of the inference, that they are caused by the inhalation of sulphuret of carbon.

3. That the proper remedies ought to be searched for to prevent these maladies.—*Gaz. Med. de Paris*, 1855, *No.* 3.

Poisonous properties of Bichromate of Potassa.

Pirogoff and Zablotzky have made experiments which confirm those of Ducatel and Schindler, made with men, and of Jaillard undertaken with animals. The results are:

1. Bichromate of potasssa belongs to the acrid metallic poisons, in the same class with arsenious acid and corrosive sublimate.

2. From 1 to 6 grains given only once, cause disorders of the digestive organs, and sometimes death.

3. The anatomico-pathological changes are analogous to those caused by arsenious acid and sublimate.

4. The best antidotes, as long as vomiting has followed, are bicarbonate of soda and magnesia; the treatment afterwards is analogous to that of poisoning with acrid substances.—*Ann. Méd. de la Flandre, Jour. de Pharm. d'Anvers, Juin* 1855.

Sulphuret of Iron for Chemico-Legal Examinations.

By Dr. Rud Kemper and Fr. Meyer.

The authors have tried to solve the question whether a pure sulphuret of iron, *free of arsenic*, is necessary for the generation of sulphuretted hydrogen in chemico-legal analysis? The gas of 2 oz. of sulphuret of iron was washed and conducted into a solution of 8 grs. chloride of mercury in 1 oz. hydrochloric acid; from thence, after having been washed again, into 3 oz. nitric acid of 1.20 specific gravity. The sulphuret of mercury was free of arsenic; not a trace of it could be detected in Marsh's apparatus.

The nitric acid, after evaporation, was treated in the same apparatus and not a trace of arsenic was found. The sulphuret of iron, however, the authors have shown to contain arsenic. They accordingly come to the conclusion that the sulphuret of iron, obtained by melting together iron filings and sulphur, and which contains arsenic, yields a sulphuretted hydrogen free of arsenic, which may be used in chemico-legal examinations.—*Archiv der Pharm. April*, 1856, 15—17.

Poisoning by Oil of Turpentine.

Mr. Marchal, in the Academy of Paris, on Dec. 10, 1855, described a case of poisoning occurring to a woman who had

lived in a newly painted room for several days. The first symptom was colic, but soon she became very uneasy; her face deathly pale; eyelids cyanotic; eye-balls fallen back; lips hardly moveable; breath cold; voice feeble; limbs cold; pulse almost imperceptible, not frequent; seeing weakened and dimmed; she had her reason and felt herself dying. Energetic applications of stimulants, internally and externally, animated her, and after several returns of the hyposthenic crisis, she recovered after the lapse of a month. This toxication could not have been caused by the fixed white lead; that it was caused by turpentine, was proved by Marchal in several experiments. The vapors of spirits of turpentine are a hyposthenic poison which is to be treated by stimulants.—*Gaz. Med. de Paris*, 1855, *No.* 52.

Poisoning by Chloroform.

Ricord extirpated the testicle of a strong man, 38 years of age, and with all caution let him inhale a very good chloroform. After half a minute narcosis had completely set in without convulsions and the operation was performed. After the chloroform had been taken away for some time, all at once the pulse ceased to beat, respiration stopped, deathlike paleness overcame the patient, who turned the eyes upwards and seemed to be dead. Instantly Ricord threw himself over him, and putting his mouth to that of the patient, blew air in, which he expelled again by compression of the thorax. After this had been done twice, pulse and respiration returned; the color improved and after half a minute the patient commenced to speak. Ricord makes the following reflections:

1. In consequence of hemorrhages or violent emotions, syncope not seldom occurs after these causes cease. Just the same with chloroform. 2. The difference of the action of chloroform depends less on the purity of the article, as Dédillot asserts, but, like with other medicines, from idiosyncrasis. 3. The above treatment of poisoning by chloroform is, according to Ricord, who often had resort to it, safer and quicker to apply than any other counter-poison.—*Jahrb. d. ges. Med.*, lxx, *No.* 7.

Poisonous properties of Brine.

In the session of the Academy of Sciences of Paris, on

July 2d, Prof. Reynal read a paper in which he shows that the brine—the liquid residue from salted meat and fishes—which in France is used by the countrymen in place of table salt, acquires poisonous properties after having been kept for some time. More than 100 experiments have led him to the following conclusions:

1. Three or four months after it has been made brine becomes poisonous.

2. One or two decilitres is poisonous to dogs; in much smaller quantity it causes vomiting.

3. The addition of this liquid to the vitals, even in small quantities, if continued for some time, may cause death.

4. But the salt prepared from the brine may be used without danger; the poisonous principle remains in the liquid.—*Jour. de Pharm. d' Anvers, Aout.*, 1855.

ON THE PREPARATION OF MORPHIA.

Translated by S. S. Garrigues from T. Muck.

In the "Zeitschrift für Pharmacie," 1854, No. 10, a process for the preparation of morphia was communicated by G. Ramdohr, which appeared to have an advantage over previously proposed methods in its brevity and simplicity. According to this process the opium is extracted by alcohol of 60 per cent.; to the tincture thus obtained carbonate of ammonia was added, the mixture at the same time being well shaken together. After standing ten minutes, the narcotin separates in colorless crystals free from morphia; from the tincture which was separated from the narcotin, the morphia crystallizes in shining crystals, more of which are obtained on the further concentration of the mother liquors.

Muck, to test this process, took 3 ounces of opium and by strictly following the directions, obtained nearly 51 grains of nearly white narcotin. This he dissolved in liquor potassa with the aid of heat, and on saturating the alkaline solution with sulphuric acid he obtained a small precipitate of morphia, which on drying weighed 0.250 grains. From the solution separated from narcotin, after standing a week, only a few crystals had separated, and their number had increased very little after another

week's standing, on which account the entire liquors were evaporated down to one-sixth and again allowed to stand in the quiet; at the end of a week very little had separated. At this stage of the process Muck lost his patience, thinking that he might have to wait some weeks longer for an increase in his crystals of light brown morphia; he therefore evaporated to the consistence of extract, which was treated with acetic acid and water, and precipitated with ammonia, the product being over two drachms of nearly pure morphia, which proved that the opium used was of a good quality. There appeared in the same Journal, 1855, No. 6, during the time Muck was making these investigations, an article from Plener, who also speaks of the uncertainty of this process of Ramdohr's. He obtained a yellowish precipitate of narcotin, and a dark brown morphia containing narcotin. By the evaporations of the mother liquors Plener obtained a few more cystals; their number did not pay for the trouble of separating them from the extractive matter. Plener does not mention whether he found the narcotin contained morphia, and Muck could not strengthen the statement that the morphia contained narcotin; for according to Ramdohr's process he obtained only a small portion of morphia, although the opium was of the best quality.

ON RHATANY ROOT.

By Dr. Schuchardt.*

The appearance of a small parcel of a peculiar kind of Rhatany Root in the London drug market, in the autumn of 1854, gave me occasion to make a comparative investigation of it with the well-known Rhatany Root of commerce.

The newly imported drug was, as is usual in English wholesale trade, distinguished with the name of the place of exportation, and called *Savanilla Rhatany*, or, as in more recent importations, [*New*] *Granada Rhatany*.

The pharmacopœias of Europe, with the exception of the French, sanction the use of the root, exclusively of *Krameria triandra;* while the *Codex* admits the root of *Kr. Ixine*. The root of the first plant is generally known under the simple name of *Rhatany*

* Botanische Zeitung, 3 and 10 Aug., 1855.

Root (*Radix Ratanhiæ;*) that of the second plant is distinguished by French druggists as *West Indian Rhatany* (*Radix Ratanhiæ Antillarum,*) under which name, brief and somewhat superficial descriptions of it may be found in some scientific journals. The most detailed account, referring, however, only to its external appearance and characters, is that given by Guibourt (*Dictionaire des Drogues simples et composés*, 1829, tome iv. 376), as derived partly from his own investigation of specimens found in French commerce, and partly from observations made on the spot by Tussac, who published a description of it, with a figure, in his *Flore des Antilles.*

Besides this West Indian Rhatany, which almost always occurs in trade *per se*, we find sometimes among ordinary Rhatany other roots, evidently derived from different species, though belonging to the same genus. *Krameria argentea* and *Kr. linearis* have been named as the origin of these roots. I have not, however, yet succeeded in distinguishing with certainty these latter roots, although with a favorable chance for doing so, having had within a few months as much as 8000 lbs. of genuine Rhatany before my eyes, with liberty of searching it over. I may therefore pronounce the admixture of those two roots as, at all events, of but rare occurrence. An intentional or fraudulent adulteration of the drug is not easily carried out, on account of the characteristic color which the genuine rhatany possesses. Martiny has, however, noticed such an one. He found among some genuine rhatany, pieces of a yellowish-red root, having a rough uneven surface, a clean fracture, and a soft wood. Its origin is unknown, and he describes it briefly as *Radix Ratanhiæ spuria.*

Krameria triandra, discovered by Ruiz and Pavon, grows in Peru and Bolivia, half-way up the western slopes of the Cordilleras. It is exported from Lima chiefly to the ports of Europe. It does not appear that we are at present acquainted with any further distribution of this plant on the South American continent.

Krameria Ixine was first found by Löffling on the continent, so is by no means restricted to the Antilles. But its exportation takes place from Martinique and Guadaloupe, whence it is sent to France.

As the port of Savanilla (12°.2) is in New Granada, at the mouth of one of the lateral branches of the river Magdalena, which flows into the Caribbean Sea, it is situated in a part of America where *Krameria triandra* has not yet been found. This circumstance justified the supposition that the Savanilla Rhatany might be derived from another species ; a supposition which, after a careful comparative examination of a quantity of 180 lbs. of this drug, I am warranted in saying has become a certainty.*

Both kinds of Rhatany, namely that from the ports of Peru and that from Savanilla, have hitherto been exported in serons of 180 to 200 lbs.

For the sake of brevity, I shall designate the Peruvian root *Payta Rhatany*, a name under which it figures in the English

* With regard to the botanical distribution of the genus *Krameria*, we find in Asa Gray's *Genera of the Plants of the United States*, ii. 225, some short remarks under the head of *Kr. lanceolata*, Torrey. As far as I have been able to gather, there are at present fourteen well-determined species of this genus, viz :—

5 from Brazil . . .	*Kr. glabra*, Spreng.	*Neue Ental.*, 2, p. 157,
	" *grandiflora*, A. St. Hil.	*Flor. Bras. merid.*, tom. ii p. 72, t. 97.
	" *ruscifolia*, A. St. Hil.	
	" *tomentosa*, A. St. Hil.	
	" *Beyrichii*, Hb. Lehm.	
3 from Peru	" *triandra*, Ruiz et Pav.	*Flor. Peruv.*, i., tab. 98.
	" *linearis*, Ruiz et Pav.	*Flor. Peruv.*, i., tab. 94.
	" *cuspidata*, Presl.	*Reliq., Haenk.*, ii. 103.
3 from Mexico . . .	" *secundiflora*.	*Flor. Mex.*, ic. ined.
	" *pauciflora*.	*Flor. Mex.*, ic. ined.
	" *cistoidea*.	Hook. in App. ad B. Voy., t. 5.
2 from the West Indies	" *cytisoides*, Cavan.	*Ic.* 4, t. 590.
	" *Ixine*, L., p. 177 (occurs also near Cumana, in S. America.)	
1 from Florida, Texas, and Arkansas	" *lanceolata*, Torrey.	Asa Gray, *Genera*, ii. 225, tab. 185, 186.

The species called by Martius, in his *Pharmacognosie*, *Kr. argentea*, I have been unable to find.

Aug. St. Hilaire, who usually enters so much into detail, mentions nothing about the use of the roots of the Brazilian species ; and De Candolle, in speaking of *Krameria triandra*, only says that the root is officinal. Tussac gives a little more information in his *Flor. Antillarum*, in which work (tab. 15, fig. 10, 11), he figures an entire root and also a portion of a root of *Kr. Ixine ;* he also gives some account of its uses in the countries where produced. Asa Gray mentions (l. c.) that the root of *Kr. lanceolata*, Torrey, frequently three feet long, is often substituted in the south of the United States for the root imported from Peru, but he gives no description of it. In the Flora of North America of Drs. Torrey and Asa Gray, we find, however, when speaking of the properties and effects of the Peruvian Rhatany, that " the roots of *Kr. lanceolata* are endowed with similar properties as the roots of *Kr. triandra*." I am indebted to the verbal communication of my friend Dr. Matthes for the information that during a residence of many years in Texas, he had known but few instances of the root of *Kr. lanceolata*, there a common plant, being used in medicine.

official lists of imports; the new drug I shall call *Savanilla Rhatany*.

The opinion of Mettenheimer (*Archiv der Pharm.*, 53, II. 180) that it is almost impossible for *Radix Nanary* to come into trade as a spurious rhatany, as supposed by Wiggers, I perfectly agree with. The difference between the two roots is too striking not to be observed at once.

The seron of Savanilla Rhatany which I examined, consisted entirely of one sort; while in most serons of Payta Rhatany I have observed that, apart from the difference which might occur in the same root when collected at different times of the year, or when exported from different places, it varied very materially in the same seron, young and old root-stocks differing greatly in the color, size, number, and length of their roots, being all mixed together.

Druggists are in the habit of distinguishing two sorts of Payta Rhatany, one sort *stumpy* or *short*, and another designated as *long*. If the root-diggers bestow the needful care in removing the roots from the soil, the *long* variety of the drug will be obtained; while in the *short*, stumpy, or chumpy form, it is plainly indicated that the shrubs have been torn from the soil with force, and that sufficient regard has not been had carefully to extract the long, creeping root. The *long* Rhatany is preferred to the *short* or stumpy variety. The stumpy sort occurs in pieces, from the lower part of which proceed numerous roots, some running in a perpendicular, but more in a tolerably regular horizontal direction. The aerial stem varies very much in length and thickness, as do likewise the length, thickness, number, and direction of the roots. In most cases, the stem of the Rhatany plant is cut off a few inches above the ground; its thickness varies from $\frac{1}{4}$ of an inch to 3 inches; it is not always perfectly cylindrical, but frequently irregular and knotty. One seron contained roots evidently collected with very little care, since to some of them, branched or simple stems from 1 to 2 feet long were still attached. The longest aerial stem which I had the opportunity of seeing, measured 26 inches. Another and upright stem whose base of $3\frac{1}{8}$ inches in diameter, branched into three nearly equal shoots, was covered here and there, and especially on its broken ends, with a grey epidermis, upon which, besides some blackish

Verrucariæ, there was a dark-fruited *Lecidea*, with a green thallus. Another seron contained principally the roots and stems of younger plants, which, at scarcely one inch above the ground, had divided into numerous branches and twigs, the latter clothed with a dense covering of long, silky, white, adpressed hairs. The foliaceous, thin, brittle, brown bark, is easily detached. The youngest branches still retained here and there the small oval leaflets, invested with the same covering of hairs as the branches. According to the testimony of travellers, the rhatany plant is easily recognized, even at a distance, not only by its bright red flowers, but also by the silky, shining pubescence of the leaves. Under the microscope this pubescence is seen to consist of densely-crowded, long, one-celled, colorless, thick-walled, hollow hairs.

According to the age of the plant, we find a difference in the external appearance, and more or less in the internal structure, of its stem—less so, however in the roŏts, which, to us, are of more importance.

The aerial stem of the young plant is covered with a reddish-brown, rough, but slightly wrinkled bark, which closely adheres to the wood. A transverse section shows the layer of bark strongly distinguished by its internal red color from the yellowish white wood. In older stems the bark assumes a somewhat different color from a mixture of dirty brown, but the wood remains the same. In old stems, however, having cortical matter to the thickness of a quarter of an inch, a very different external appearance is presented, such, in fact, as we have noticed on the trunks of old oaks. Deep horizontal and perpendicular fissures divide the bark into a number of irregular elevated portions. The perpendicular fissures are broader and more open; but less deep than the horizontal, which sometimes penetrate down to the wood of the tree. The connexion between wood and bark is usually very weak; it therefore frequently occurs that in handling the roots portions of the bark break off. It often happens that a seron of 180 lbs. contains twenty pounds of loose bark. As the active principles of the root-bark are, to some extent, present in the bark of the stem, it formerly occurred that the [stem-]bark was sold by itself or mixed with root-bark. Martius and other writers on Materia Medica mention this; it seems, how-

ever, that the bark has not been a regular article of trade, but merely introduced as an experiment.

As regards the root proper, which in its native country is used for the same purposes as with us, we cannot, like many writers on Materia Medica, draw a distinction between the structure of the principal and secondary roots. From the root-stock issue a number of roots, which shoot in different directions, but with a tendency to assume very soon a more horizontal course; they are undulating, cylindrical, and, as before remarked, exceedingly variable in length, according to age and locality. The roots of the stumpy sort of rhatany never equal in length those of the so-called *long* sort,—a natural consequence of the greater care bestowed in the collection and packing of the latter.

It appears that upon the spot, neither the young nor the old plants are specially chosen for obtaining the long roots. The roots required in this state are extracted from the ground with some care; each bunch while fresh is separately doubled in two, like sarsaparilla, and then, after awhile, again bent in two, a bundle being thus formed, round which a long root is twisted a few times. This rather careful plan of packing obviates the unavoidable splitting off of the bark and the breaking and bruising of the roots that is noticeable in the stumpy form of the drug. The length of these small bundles varies according to the strength and the number and length of the roots of the shrub. I have seen them from seven to fourteen inches long, and weighing from three to ten ounces. A stem 1½ inches thick, and three inches high, with three roots measuring respectively twenty-six, twenty-nine, and fifty-nine inches in length, and three-quarters of an inch at the thickest part, had been formed into a bundle ten inches long, which was tied together by the ends of their longest root, which ends branched off at a distance of fifty inches from the stem.

When one can examine large quantities of Payta and Savanilla Rhatany, it is certainly no difficult task to distinguish the one from the other; but it is somewhat less easy to discover single pieces of the latter when mixed with Peruvian Rhatany. I think it therefore not superfluous to give a description of the new Rhatany, especially since the most copious works on Materia Medica, as Thomson, and even Pereira, in his new edition, are

wholly silent on the subject. The short notices which occur in German works on Materia Medica and Pharmacy, describing roots found mixed, either accidentally or intentionally, with genuine Rhatany, are very brief and insufficient. Moreover, they say nothing about the internal structure of these roots, and nothing, of course, about the drug now under discussion. The only anatomical examination of Payta Rhatany hitherto made, is that of Berg, the result of which is published in brief in his work on Materia Medica.

As regards external appearance, the stems of the Savanilla Rhatany, are never so knotty and irregularly rounded as those of the old kind of Rhatany, but are more symmetrical and slender, more regularly cylindrical, and generally shorter. Its roots (we cannot speak of one principal root,) as to thickness, are as different as those of the stumpy variety of Payta Rhatany, but never so long as those of Peruvian Rhatany sometimes are. Their anatomical structure readily admits of their being broken, without the bark thereby splitting off. Pieces of root, from four to at most ten inches long, are the most frequent, and these with the root-stocks before described, to some of which are attached roots of from four to six inches, form the contents of the seron. The roots are marked with shallow, undulated furrows, which are near each other, but not always parallel. The roots are also marked, often all round, by deep narrow, transverse cracks, which sometimes even lay bare the wood. The bark is united to the wood by a rather broad inner cortical layer, and adheres to it with firmness. I shall revert to this rather important distinctive point when I describe the anatomical structure of the root.

It is difficult, in fact almost impossible, briefly to define the color of Savanilla Rhatany. It is a singular mixture of different shades, a mixture of cinnamon-brown and violet-red, dusted, as it were, with a fine leaden grey. If slightly rubbed with a soft substance, the bark assumes a peculiar, almost garnet-red lustre, which widely differs from the weaker and duller resinous appearance of Peruvian Rhatany. The adhesion of the bark to the wood is so strong in Savanilla Rhatany Root, that when broken in pieces, the bark always remains attached, which is never the case in Payta Rhatany, where, if so treated, the bark splits or

peels off. The color of the wood is yellowish-white, almost alike in both roots; its fracture in both the old and new sort of Rhatany, and in old as well as young roots, is of the same character, namely, short-splintery [*hurzsplitterig.*] The fracture of the bark, on the other hand, is very different in the two sorts, as might be expected from the dissimilar texture of the layers. The bark of Payta Rhatany has a fibrous fracture, arising from the nature of its inner layer; the middle and outer layers break more evenly. The bark of Savanilla Rhatany has a nearly even fracture, its outer and middle layers presenting a somewhat powdery appearance.

The bark of Payta Rhatany, from its toughness, cannot be reduced to powder without considerable labor, but the bark of Savanilla Rhatany can be powdered without any particular difficulty. The powder of the latter is of a purplish red, resembling very much that of tormentilla root; while the powder of the root of Peruvian Rhatany is easily distinguished by its tint of brownish-red and cinnamon.—*London Pharm. Journ. Aug.* 1856.

(To be continued.)

RESEARCHES ON ALOETINE.*

By M. E. Robiquet.

The subject with which I am now about to entertain the Academy, is not perfectly new, and it has already had long and fruitless investigation at my hands.

Ten years ago, I published my first work on the juice of aloes, and I was enabled, among other results, to prove that:—

1. This juice exists in the different varieties of aloes, in the state of colorless liquid, acquiring the appearance and chemical constitution which we are acquainted with, in consequence of an absorption of oxygen.

2. Socotrine also contains a proximate principle, to which I gave the name of aloëtine, formed of carbon, hydrogen, and oxygen, without a trace of nitrogen, but which could not be crystallised.

I shall only speak from memory of chloralise, and chloraloïle, the chlorated derivatives of aloëtine, and only because, their ex-

* Read to the *Académie de Médecine*, Feb. 26, 1856.

istence having been disputed, I have not taken the trouble to place crystallised specimens of them before the Academy on the present occasion.

In 1851, Messrs. Smith, of Edinburgh, were enabled to extract from Barbadoes aloes a crystallisable body to which they gave the name of aloïne. The process followed by these chemists consisted in triturating aloes with sand, removing, by lixiviation, every thing that is soluble in cold water, and evaporating *in vacuo*, under the influence of a temperature of 50° to 60° C. (122° to 140° F.)

I was no little surprised to learn this result, for two reasons: in the first place, this mode of preparation was one of the first to occur to my mind, and I had applied it in vain to Socotrine aloes; and, in the next place, being of opinion, in common with all the authors of treatises on Materia Medica, that transparent and vitreous Socotrine aloes is the best of all kinds, I had not thought of using Barbadoes or hepatic aloes. Being thus punished for my excessive confidence in the statements of others, I very soon returned to my work. My first care was to repeat Messrs. Smiths' mode of preparation on Barbadoes aloes, and on vitreous Socotrine aloes. In the first case, I obtained crystals; in the second, an amorphous mass, without any crystalline appearance.

I then dissolved a similar quantity of Barbadoes aloes in boiling water, and evaporated the solution to dryness, on a sand bath, in the open air. It became transparent and vitreous, that is to say, quite similar to Socotrine aloes; but, as soon as this transformation was accomplished, it was impossible to extract the smallest trace of crystals from it.

The mystery was then cleared up, and I arrived at the conviction that:

1. All the kinds of juices of vitreous and transparent aloes (Socotrine aloes, Cape aloes, &c.) have undergone the action of heat, and their crystallisable principle is metamorphosed into an amorphous substance, which is ordinarily called resin of aloes, but which is no other than aloëtine, which has become, by molecular change, amorphous aloëtine, insoluble in water.

2. All the kinds of opaque aloes with a waxy fracture were

obtained by dessication in the open air, and without the aid of heat; they all contain crystallisable aloëtine.

Messrs. Smiths' process of preparation is very simple in principle, but, in practice, it is troublesome to evaporate, *in vacuo*, large quantities of liquid, and, moreover, the yield is very trifling. I endeavored, therefore, to overcome this difficulty, and, after some failures, I arrived at the following method, which gives about 15 per cent. of product.

Preparation of Aloëtine.

Distilled water is boiled for an hour, in order to expel the air, and, when cold, 2 kilogrammes are poured on 1 kilogramme of Barbadoes aloes in powder, which is kept ready in a dish. By agitating rapidly, the solution is effected in a few minutes; the dish is covered as accurately as possible, and left to repose for about a quarter of an hour. The liquor must be decanted into a conserve glass, of such a size as to exactly contain it; a little ether is poured in, in order to expel the air as much as possible, and to prevent mouldiness; the lid is immediately fitted on, and carefully luted. It only remains to place this vessel in a cool situation, and to leave it to itself for a month. It is then opened, and, after having separated all the portion still remaining liquid, we find its interior lined with a compact mass, and, as it were, covered with stalagmites. These concretions are no other than a mixture of amorphous aloëtine, foreign earthy matters, and crystallisable aloëtine.

Now, as the latter is very sparingly soluble in cold water, and much heavier than the impurities which accompany it, it is easy to separate it, mechanically, by simple levigation.

The crude aloëtine is under the form of yellowish and radiated crystalline grains, giving way between the teeth, like wax, and rapidly turning brown, in contact with nitric acid, and even, in damp air. To purify them completely, they must be washed in alcohol of 56 centesimal degrees (22° Beaumé,) until this liquid takes a straw-colored tint, without any red in it, and then crystallised five or six different times in alcohol of 86 per cent. (36° B.)

Dr. Pereira has described, with much care, a new variety of Socotrine aloes, recently imported into England, and which is no other than the natural juice of the plant which has undergone no

manipulation. It is a chestnut brown liquid, with a powerful odor of black currant, in which float a great number of silky crystals of aloëtine.

It would appear, at first sight, that nothing is easier than to prepare aloëtine from this natural juice: simple pressure between folds of bibulous paper, and several crystallisations in alcohol, ought to be sufficient. But this is not the case, and the portion of this juice which has become altered in the air, suffices for preventing the crystallisation of the aloëtine from remaining intact; at any rate, a large portion is lost. The process which is the least disadvantageous, is the following:—the liquid juice of Socotrine aloes is diluted with distilled water, to which 10 or 12 drops of liquid ammonia have been added per litre. The resinous portion of the juice is first dissolved by the alkali, and, if we operate very quickly, the portion still unaltered may be separated by filtration. Two or three crystallizations in alcohol are then sufficient for arriving at complete purification. However, this method, however rapidly we operate, never gives more than 4 or 5 per cent. of aloëtine.

Pure aloëtine occurs under the form of prismatic needles, of a fine sulphur yellow. At the temperature of 10° C. (50° F.,) 1 part of aloëtine requires, for its solutlon, 10 parts of water, 2 parts of alcohol, of 36° B., and 8 parts of ether of 66° B. It is impossible to determine, exactly, its solubility at the boiling points of these liquids, because heat alters it more or less profoundly.

Owing to its sparing solubility in water, aloëtine has scarcely any taste, but its characteristic bitterness is speedily developed.

The mucilaginous pulp of the leaves of aloes contains a peculiar matter, which is colorless in the plant, but which rapidly acquires a violet red color in contact with the air. This may easily be perceived by suddenly tearing one of these leaves, when the central part rapidly becomes colored. This substance, whatever may be its nature, accompanies aloëtine in its last purifications; I have ascertained that to it was due the property of being colored red by nitric acid, attributed by Messrs. Smith to aloïne.

Without heat, pure aloëtine should color nitric, sulphuric and hydrochloric acids, of a citron yellow. When it is boiled for about half an hour, with concentrated nitric acid, we obtain a

solution which, treated with cold water, deposits chrysammic acid, in the form of a greenish yellow powder, easily recognisable by the magnificent violet tint which it communicates to ammonia. These reactions with cold and boiling nitric acid are characteristic.

After having taken so much trouble to isolate the crystallisable principle of aloes, I thought I at least should find recompense in the energetic action of aloëtine on the organism. I requested my friend, Dr. Vigla, physician to the Maison de Santé, to be kind enough to make some experiments in this respect, cautioning him that the new substance should act with ten times the energy of ordinary aloes. Here, I was completely deceived in my expectation; the doses were carried timidly to 0.05 grammes, and produced no effect; then, successively, 0.25, 0.50, and 1 gramme at a time were administered. The observations were to the number of twenty-three.

Of these twenty-three observations, sixteen had a completely negative result; in two others, the laxative effect was well marked, and, in the remaining five, the therapeutical action was very slow, and very doubtful. All these observations were made with the greatest care by Dr. Vigla, who devoted himself with a good grace, for which I cannot thank him sufficiently, to the experiments which I desired to make, and varied several times the mode of administering the aloëtine. This substance was given to the same patients, sometimes under the form of pills, sometimes in that of powder, or in alcoholic solution; the results were always identical. In glancing over the list, we remark the observation No. 4, in which a patient, who was easily influenced by 4 grammes of calcined magnesia, was insensible to the action of aloëtine, then submitted to the action of magnesia a second time; he was again purged. Observations 8 and 16 are analogous; only, instead of magnesia, castor oil, or German brandy, was used as a comparative test. I was curious to try on myself a still more decisive experiment. I weighed exactly 2 grammes of aloëtine, and divided it into 2 equal parts; I took the first part without subjecting it to any manipulation: there was no result. The second gramme was heated to 100° C. (212° F.,) until it was converted into a small amorphous and translucid mass, with no appearance of crystallization. When thus transformed, I

took it eight days after the first dose; the purgative action was not long delayed, and it was arrested only when the digestive canal was completely evacuated.

From all these facts, it results that aloëtine is the chemical and crystallisable principle of the officinal juice of the aloes, that it does not possess the purgative property of aloes, and only recovers it when, by the action of the air or of heat, it has become amorphous and uncrystallisable. It occupies the same position as that which mannite does with regard to manna, and santonine to semen-contra, and it will also be the same with cathartine, the proximate principle of senna, when it has been properly isolated, for experiment has already taught us that a very long continued decoction of senna produces a liquor which is not so active as the simple infusion, having, however, exhausted the plant of all the parts soluble in water.

The excessive bitterness of aloëtine induced me to try its action in well-characterised intermittent fevers, and it seemed to me that it would be possible to increase its efficacy by associating it with a tonic, such as pulvis ferri (fer réduit.) Five cases of intermittent fever are at present under treatment, and the first results obtained enable us to perceive the efficacy of the new febrifuge. The doses which have been given are from 10 to 20 centigrammes per day for children, and from 50 centigrammes to 3 grammes for adults. The compound powder contains 1 part of aloëtine, and two parts of pulvis ferri. In all the patients the appetite was restored, and the fits diminished each time in intensity. As the cure is not complete, and as, in such cases, we cannot be too careful in drawing conclusions, I will now confine myself to taking data for this new febrifuge treatment, merely asking the Academy's permission to communicate the result of my observations, when the season and circumstances enable me to apply this kind of experimentation on a scale of sufficient magnitude to prevent the possibility of doubt.

In conclusion, it results from the facts contained in the present memoir that:—

In a therapeutical point of view:—Aloëtine, the proximate principle of officinal aloes, should not be regarded as a purgative, or, at least, as a very slow and doubtful one.

The opaque variety of aloes with a waxy fracture, such as Bar-

badoes and hepatic aloes, are the best; they purge efficiently, and without causing those intestinal pains which always accompany the administration of vitreous and transparent aloes, such as Socotrine aloes, Cape aloes, &c.

Pure aloëtine becomes purgative when it has been altered by the action of air and heat. Associated with pulvis ferri, it will probably be of great assistance in the treatment of fevers.

In a chemical point of view:—Aloëtine is a crystallisable substance formed solely of carbon and oxygen. It may be obtained by very easy processes, but only with the juice of Socotrine aloes, or with those opaque extracts which air and heat have not altered so as to render all their crystals amorphous.

It is aloëtine which gives, by the treatment with chlorine, the crystallisable compounds to which I have given the names of chloralise and chloraloïle.

London Chemist, from Journal de Pharmacie, April, 1856.

TESTING FOR STRYCHNIA, BRUCIA, &c.

By Mr. John Horsley.

I beg to make a few observations in reference to the poison strychnia, the properties and effects of which have recently been discussed during the celebrated trial of Palmer. In doing this I wish to be understood as confining myself strictly to the chemical manipulation of strychnia.

It is because I have had many opportunities of noticing the very strong affinity which exists between chromic acid and strychnia, that I propose the former for the precipitation of the poison in preference to the alkalies, provided always that the solution to be operated on is more or less pure.

Before proceeding further in this matter allow me to premise that at your last meeting I presented a paper, detailing a new method of testing iodine, as well as for *manufacturing* it from prepared kelp lyes by *precipitation* with a certain test liquor. But as it would have been inconvenient for me to have attended the Glasgow meeting, I will here exhibit, with your permission, a sample of iodine thus prepared, as well as the liquor from which it was precipitated, and the test liquor used for that purpose. I may observe that this precipitating liquor is composed of one

part bichromate of potash dissolved in fourteen parts of water, to which is afterwards added two parts in bulk of strong sulphuric acid.

The circumstances connected with Palmer's trial induced me to make a series of experiments, and, as I possessed a large quantity of the just-named precipitant, I resolved to try its effects upon a solution of strychnia, which, to my surprise, was entirely precipitated in the form of a beautiful golden-colored and insoluble precipitate.

It will form a beautiful experiment to witness the complete *decolorization* of a solution of either the chromate or bichromate of potash by the gradual addition of a solution of the acetate of strychnia, chromate of strychnia being immediately precipitated; and, if the experiment be well conducted, scarcely a trace of bitterness will be left in the supernatant or filtered liquor.

I do not, however, claim as an *original* discovery the use of a chromic salt and an acid liquor, because they have been already suggested by Professor Otto, and have been in use for some time; but the *point* to which I wish to call your attention is the *essential difference* in the mode of their application. In short, such is the extreme range of sensibility which I have attained, that it is no vain assertion on my part in saying that it is just as much out of the power of any human being to define its limits, as it would be for a person to count the sand on the sea-shore, or to measure the drops of the ocean surrounding it; and without an experiment in point, you would not, perhaps, believe it possible.

I will therefore take say thirty drops of this solution of strychnia, containing half a grain. I will dilute it with four drachms of water. I now take this dropping tube, and charging it with a solution of bichromate of potash, I will drop in say six drops. You observe that I have no sooner added *one* drop than crystals begin to form at the bottom; and on the addition of five drops more, and stirring the mixture, the decomposition is complete. I have now split up the half grain of strychnia into *millions* of atoms of minute crystals, each of which, could they be separated, would as effectually demonstrate the chemical characteristics of strychnia as though I had operated on a pound weight of the same. I have now to show you the chemical reaction with those

crystals. I will let fall into this evaporating dish a *drop* of the liquor containing the chromate of strychnia, and having shaken the vessel so as to spread out the drop as much as possible, I will project on it from time to time a drop or two of strong sulphuric acid, when the beauty and intensity of the effect will be strikingly apparent. This may even be shown on a still more refined scale, by taking a crystal or two on the point of a penknife, transferring it to the edge of an evaporating dish, and touching the spot with a drop of sulphuric acid.

This chromate of strychnia may be obtained in the amorphous state from the neutral chromate of potash; in the nacreous or irregular crystalline state from the bichromate; and lastly, which forms a more striking peculiarity, in the regular crystalline condition—viz., first in the form of fine spiculæ, and next of beautiful small cubic crystals, which completely stud the sides of the glass vessel when a weak *acid* solution, such as recommended for the precipitation of iodine is used, but of course, considerably diluted. This latter peculiarity is very decided, and characteristic of strychnia.

Experiment: 30 drops of solution of acetate of strychnia, 8 drachms of water; then add 20 drops of the acid solution of bichromate of potash; let it crystallize without shaking.

I have taken some pains to ascertain in what respects other substances may *clash* with this method by producing a more or less similarly colored salt, and, as far as I have had opportunities of judging, there appear to be only *two*—viz., chromate of brucia and chromate of lead. But I conceive that any Chemist, well acquainted with their specific characters, can *easily distinguish* them from chromate of strychnia.

Both chromate of strychnia and chromate of brucia are very susceptible of *discoloration*—that is, becoming brown or dark-colored by exposure to the sun-light—a property not possessed by chromate of lead.

Chromate of strychnia becomes changed to a deep *purple*, and then to a *violet* and *red* when touched with a glass rod dipped in sulphuric acid. Chromate of brucia, on the contrary, shows only an *orange-red* color, without any shade of blue or violet. Again, chromate of brucia is so much more soluble than

chromate of strychnia, that no *crystals* can be obtained by precipitation with the weak acid liquor previously alluded to.

Chromate of lead never can (except at first sight) be mistaken for either chromate of strychnia or brucia, because, first, it is always in the amorphous or powdery state; and secondly, no color is developed on the addition of sulphuric acid.

It is therefore evident that the production of chromate of strychnia in one or other form, and its reaction with sulphuric acid, renders it a *faultless* and *invaluable* toxicological method, and enables us to pronounce with certainty respecting the alkaloid, since no other comports itself in a similar manner.

In reference to the precipitation of strychnia, it would appear, judging from the very high equivalent of strychnia (348), that a very small quantity of the chromic salt is necessary for that purpose, as may be verified by experiment. Every three-and-a-half out of four parts of chromate of strychnia may be said to be the proportion of real strychnia.*

It has been asserted since the trial, that the non-detection of strychnia in the body of John Parsons Cook, was owing to the antimony which was known to have been taken by the deceased having somewhat interfered with the tests. Such a supposition is, in my opinion, truly absurd. Nothing, I conceive, can more incontestably disprove this fallacy, than either of the following additional new tests for the detection of strychnia.

If we mix one part of a saturated solution of the yellow cyanide of potassium (containing twelve grains to each drachm of water) with two parts of a solution of the acetate of strychnia, or if we take say thirty drops of the solution of strychnia diluted with sixty or ninety drops of water, and then drop in *one* minim only of the solution of the ferrocyanide of potassium, and agitate the mixture for a few seconds, an abundance of minute yellowish-white silky crystals of the ferrocyanide of strychnia is formed. This is a very beautiful compound test, and is best shown as follows:—I first take a very small portion of powdered protosulphate of iron, and laying upon it a little of the dried ferrocyanide

* It may be a point for consideration how far chromate of potash in solution may be useful in neutralizing the effect of any of the free strychnia existing in the stomach.

of strychnia, drench them both with a drop of water—the characteristic deep blue of the iron is first developed. This must now be *dis*colored by one or two drops of strong sulphuric acid, and next a minute portion of powdered chromate of potash stirred in—the usual purple and violet color of strychnia will then readily appear. The same effect is produced with the red prussiate of potash.

The next test is the decolorization of a solution, the ammonia sulphate of copper, by the very gradual addition of a solution of strychnia and then boiling the mixture. Crystals of strychniate of copper with a little ammonia will be obtained. These, when dry, can be first decolorized by sulphuric acid; the subsequent addition of chromate of potash *ground in with the aid of a glass rod*, will reveal the presence of strychnia.

In fact, these tests, particularly that with chromate of strychnia, may be considered *double* tests, because we have first the obtainment of a peculiar crystalline compound of strychnia, which is afterwards made to develop the characteristic effects by which strychnia is recognized.—*London Pharm. Journ.*, Sept. 1, 1856.

ON A NEW METHOD OF EXTRACTING THE ALKALOIDS STRYCHNIA AND BRUCIA FROM NUX VOMICA WITHOUT ALCOHOL.

By Mr. John Horsley.

The usual modes of obtaining strychnia from nux vomica are, besides being more or less expensive, owing to the alcohol used, far from satisfactory. This, in a toxicological point of view, is particularly the case, on account of the small quantity of strychnia naturally contained in the nut, and as the production of the alkaloid for its characteristic color test is a matter of importance, I have been induced to make several experiments on the different methods in use, and it appears to me that the simplest and best is that which I now propose, viz., to make an acetic extract by kneading up, say a quarter of a pound of nux vomica with an equal quantity of commercial acetic acid, and thinning the pulpy mass with two or three pints of cold water, allowing it to digest for a few days. The clear liquor must then be decanted off and

an equal quantity of fresh water poured on the mass to digest for a day or two longer, or till all soluble matter is extracted. The clear liquor is then to be decanted, and the remainder thrown on a flannel filter. The liquid which passes through should be mixed with the former decanted liquors and evaporated to a syrupy consistence (about three or four ounces). When this is cold, dilute it with an equal quantity of water, add liquor ammoniæ in excess, and set it by for a day or two that the strychnia may crystallize out, which is known by the various little white tufts which collect within the fluid as well as on the sides of the glass vessel. When the crystallization is complete, the dark green supernatant fluid is to be passed through a calico filter, and the residuum with the crystals adhering to the vessel collected thereon to drain, the dark green mass consisting of strychnia and brucia with resinoid matter is next to be scraped off and well dried in a water bath, digested in hot diluted acetic acid and the solution filtered. The strychnia and brucia may be thrown down by potassa, or the strychnia *only* by the addition of a solution of chromate of potassa, when a chromate of strychnia will be obtained free from brucia, provided the solution be tolerably acid which retains the brucia.

This chromate of strychnia being collected on a filter and well drained, can easily be *de*chromatized by digestion in liq. ammoniæ, and the strychnia will be obtained of a more or less *snowy whiteness*.

The quantity of strychnia actually contained in the nux vomica has not, I believe, been accurately ascertained, at least if I may judge from Professor Taylor's work on poisons, where that gentleman represents it at about 5-10ths or ½ a grain per cent. I cannot help thinking that the exhaustion in that case must have been but imperfectly performed, as my own experiments show that nearly twice that quantity is capable of being extracted; for in my first concentration of the liquor from a quarter of a pound of nux vomica I obtained as follows:—

From the	1st	concentration	11	grains	of strychnia
"	2nd	"	4	"	"
"	3rd	"	2	"	"
			17	grains	

This difference in quantity is necessary to be borne in mind by the medical practitioner when prescribing the extract and other preparations of nux vomica.—*London Pharm. Journ.*, Sept. 1, 1856.

ON A MEANS OF ESTIMATING THE MONEY VALUE AND STRENGTH OF COMMERCIAL CYANIDE OF POTASSIUM.

By Thornton J. Herapath.

There is, I believe, no drug which is so frequently met with in an impure state as cyanide of potassium. This is owing not so much to the propensity which certain manufacturers appear to possess of adulterating the articles sold by them to the greatest possible extent, as to the difficulty which is experienced in preparing a pure article, and of purifying the impure cyanide after it has been manufactured. In a paper that was published in Liebig's Annalen for 1851, Professor Liebig has stated that commercial cyanide of potassium, prepared by his method, seldom contains more than 59 to 63.5 per cent. of pure cyanide. Having recently had occasion to purchase a considerable quantity of this chemical, I was induced to undertake a series of experiments, with a view of ascertaining the most expeditious method of testing the strength or money value of the various samples that were offered to me. The process I ultimately adopted was a modification of that proposed by Mr. Parkes for the determination of the percentage of copper in copper ores. It is based on the property which alkaline cyanides possess of decolorising the blue solution of cuprate of ammonia, or ammoniacal salts of copper. The first thing to be done in testing cyanide of potassium by this method, is to prepare a standard solution of ammonio-sulphate or ammonio-nitrate of copper. A certain known quantity of pure crystallised sulphate of copper,* made by crushing the pure crystals of the shops into a mortar, and pressing the powder so obtained between folds of bibulous paper, is taken, and dissolved in water, or an equivalent quantity of pure metallic (electrotype) copper is dissolved in dilute nitric acid; and the solutions so prepared are then diluted with

*$Cu+O, SO^3+Aq$.

water, so as to measure 2000, 3000, or more, water grain measures, at 60°F. Supposing 390.62 grs. of the pure sulphate, or 100 grs. of metallic copper, in the form of nitrate, to have been taken, and diluted to 2000 grain measures, every 100 grs. of such solution will, of course, represent 5 grs. metallic copper, or 6.25 grs. of the prot-oxide of copper. 100 grs. of each of the samples of cyanide of potassium to be tested, are then dissolved in a sufficient quantity of water, and introduced into the colorimeters; an excess of ammonia is added, and the standard solution of copper is carefully added, out of a graduated burette, to the contents of each colorimeter in turn, until a faint blue coloration makes its appearance in each of the solutions. The quantities of copper, or of the solutions taken, then indicate the relative strength and money value of the samples of cyanide examined. Suppose, for example, one specimen took 100 measures, and a second 150 measures, of the copper solution, the relative strengths and values of such specimens are, therefore, as 100 to 150, or 2 to 3.

In order to render this process available in the determination of the actual strength of, or proportion by weight of pure cyanide of potassium existing in, the commercial cyanides, it is only necessary to ascertain the weight of pure cyanide of potassium that is required to decolorise 1 gr. of copper, in the form of ammonio-nitrate. I regret that the temporary loss of my notebook prevents me from giving the numerical result of my experiments on this point. The mode, however, by which this may be effected is as follows:—The strength of a solution of pure hydrocyanic acid (Scheele's acid) having been determined in the usual way, either by precipitation by silver, or by means of oxide of mercury, a certain known quantity of such acid, equivalent to 100 grs. of cyanide of potassium, is taken, and supersaturated by ammonia; the alkaline solution so prepared, is then tested with the standard copper solution, in the manner before described. The latter can then, if necessary, be diluted with water, so as to render it of uniform and convenient strength.—*The Chemist, April*, 1856.

NEW PROCESS FOR PREPARING FORMIC ACID.

By M. Berthelot.

1. In a Memoir presented to the Academy, I have shown that oxide of carbon might be absorbed by potassa, fix the elements of water, and give rise to formic acid. This observation led me to seek whether it would not be possible to modify some of the reactions in which oxide of carbon is developed, in such a way as to combine this gas, in the nascent state, with the elements of water, and to obtain formic acid itself, easily and in abundance.

2. It is well known how troublesome are the present processes for obtaining this compound, the most simple of all organic acids. The ordinary way to obtain it is to treat sugar or starch with a mixture of sulphuric acid and a binoxide of manganese. This process is of great historical importance, for it enabled us to prepare formic acid without extracting it from ants, as was first done; but it is not free from inconveniences. Indeed, in the reaction just mentioned, a very great quantity of gas is developed; whence results the necessity for vessels of enormous capacity, which are frequently broken and corroded. Moreover, the acid obtained is mixed with various other substances, acid and neutral, produced simultaneously, which obliges us to purify the crude formic acid by converting it into formiate of lead, and crystallizing this body several times. These difficulties have been observed by all chemists, and have doubtless more than once stood in the way of the preparation of large quantities of formic acid, and of its employment in reactions.

3. I have succeeded in producing this body very easily, and in considerable proportion, taking oxalic acid as a starting point.

Oxalic acid submitted to the action of heat, is changed into carbonic acid, water, and oxide of carbon:—

$$C^4H^2O^8 = C^2O^4 + C^2O^2 + H^2O^2.$$

At the moment of this decomposition, the water and oxide of carbon come in contact in the nascent state; it should be sufficient, then, to secure the intervention of conditions suitable for combining these two bodies; already, from the single fact of the distillation of oxalic acid, this combination begins to be effected,

according to Gay-Lussac's experiments; but the quantity of formic acid thus produced is always very small.

Now, I have observed that we may combine with the elements of water, all the oxide of carbon furnished by oxalic acid, and simply transform this substance into carbonic acid and formic acid.

$$C^4H^2O^8 = C^2O^4 + O^4.$$

It is sufficient to introduce another body operating by action of contact—glycerine. I have already noticed this fact, and I shall now deduce from it a new process for preparing formic acid.

4. I operate as follows.

Into a retort, of the capacity of half a gallon, I introduce 1 kilogramme (about two pounds) of oxalic acid, I kilogramme of syrupy glycerine, and from 100 to 200 grammes of water. I adapt a receiver and I heat the retort very gently; the temperature should scarcely exceed 100° C. (212° F.) A brisk effervescence is soon set up, and pure carbonic acid is disengaged. After about 12 or 15 hours, all the oxalic acid is decomposed; half of its carbon and oxygen are disengaged, under the form of carbonic acid gas; a small quantity of water, charged with formic acid distils over, and there remains in the retort the glycerine holding in solution almost all the formic acid. This acid may be extracted directly, by means of carbonate of lead; but the following method is far preferable:—

Pour into the retort a pint of water and distil. Replace the water which distils over, and continue the operation until six or seven quarts of distilled liquor has been collected. At this moment almost all the formic acid is volatilised with the water, and the glycerine alone remains in the retort. It may be used for decomposing a second kilogramme of oxalic acid, a third, and so on.

3 kilogrammes of ammoniacal oxalic acid, $C^4H^2O^8 + 4HO$, yielded, by this process, 1·05 kilogrammes of formic acid, $C^2H^2O^4$.

According to the formula—

$$C^4H^2O^8, 4HO = C^2O^4 + 4HO + C^2H^2O^4,$$

3 kilogrammes of pure oxalic acid should furnish 1·09 kilogrammes of formic acid.

The difference between the results obtained and the calculated result is as small as possible; moreover it may be explained by the impurities which commercial oxalic acid contains.*

5. The following is the detail of the foregoing preparation:—

	kilogrammes.
Oxalic acid	1
Glycerine	1

We operated as has just been stated, and we obtained:—

	grms.
1st. 2 litres of distilled liquid containing:—formic acid	146
2nd. 5·5 litres " " " "	176
	322

The glycerine still retained some formic acid. We added to the retort a second kilogramme of oxalic acid. We obtained:

	grms.
3rd. 1 litre of distilled liquid containing:—formic acid	70
4th. 4 litres " " " "	250
	320

The glycerine still retained some formic acid. We added a third kilogramme of oxalic acid. We obtained:—

	grms.
5th. 3 litres of distilled liquid containing:—formic acid	180
6th. 4·5 litres " " " "	229
	409

To sum up:—3 kilogrammes of oxalic acid furnished 1.051 kilogrammes of formic acid.

This preparation is so regular that it may be executed without any difficulty, with any quantity, whatever, of oxalic acid. It does not require, moreover, much watching.

6. The only essential point, is not to hurry the decomposition of the oxalic acid by the glycerine. Indeed, if we operate too rapidly, if the temperature of the mixture rises too high, the disengagement of carbonic acid is at first accelerated; but as soon as it has ceased, the temperature of the mass very soon reaches from 190° to 200° C. (374° to 392°F.), and a new gaseous dis-

* 100 parts of the acid employed left a fixed residue equal to 2·07 parts.

engagement is produced; this is pure oxide of carbon. The liquid distilled throughout the operation thus conducted, does not contain one-tenth part of the formic acid which might be obtained by operating as I have said above.

7. This new phenomenon—disengagement of oxide of carbon—is due to the decomposition, at 200°C. (392°F.), of the formic acid retained in solution by the glycerine, in the same way as ammoniacal gas is dissolved by water. Indeed pure formic acid, heated for some hours to between 200° and 250°C. (392° and 482°F.), in sealed tubes, is, for the most part, decomposed into water and oxide of carbon; the glycerine exerts scarcely any accelerating influence on this decomposition. These observations may be turned to account, in the preparation of oxide of carbon by oxalic acid; when, if we heat oxalic acid, mixed, not with sulphuric acid, but with glycerine, we obtain, successively and separately, the two gases which sulphuric acid mixed in equal volumes produces; first, carbonic acid, and then, carbonic oxide. This last body may, therefore, be thus prepared pure, without washing with alkali.

8. However, a considerable interval of temperature separates these two successive phenomena; decomposition at 100°C. (212°F.), of the oxalic acid into carbonic acid and formic acid, in contact with glycerine, then, further decomposition at 200°C. (392° F.), of formic acid, into water and carbonic acid. Nothing is easier than to govern the reaction, and to obtain, by successive additions of water, the whole of the formic acid which oxalic acid can furnish.

Formic acid thus prepared, is very pure and completely free from oxalic acid. Saturated, by means of carbonate of lime, baryta, or lead, it furnishes by the first crystallisation, pure formiate of lime, baryta, or lead. 500 grammes of commercial oxalic acid produced about 500 grammes of pure formiate of lead.

It will be remarked, that the glycerine is found entire in the retort, at the end of each operation (with the exception of a very small quantity—about 1 gramme per litre—volatilised with the water), exactly like sulphuric acid in the preparation of ether. *London Chemist, from Comptes Rendus, March* 3, 1856.

Varieties.

On the Manufacture of Iron and Steel without Fuel. By Mr. W. Bessamer.—Mr. Bessamer asserted that crude iron contains about 10 per cent. of carbon; that carbon cannot exist at a white heat in the presence of oxygen without uniting therewith and producing combustion; that such combustion would proceed with a rapidity dependent on the amount of surface of carbon exposed; lastly, that the temperature which the metal would acquire would be also dependent on the rapidity with which the oxygen and carbon were made to combine, and consequently that it was only necessary to bring the oxygen and carbon together in such a manner that a vast surface should be exposed to their mutual action in order to produce a temperature hitherto unattainable in our largest furnaces. With a view of testing practically this theory, he had constructed a cylindrical vessel of three feet in height, somewhat like an ordinary cupola furnace, the interior of which was lined with fire-bricks; and at about two inches from the bottom of it inserted five tuyere pipes, the nozzles of which were framed of well-burnt fire-clay, the orifice of each tuyere pipe being about three-eighths of an inch in diameter. These were so put into the brick lining (from the outer side) as to admit of their removal and renewal in a few minutes when they were worn out. At one side of the vessel, about half-way up from the bottom, there was a hole made for running in the crude metal, and on the opposite side there was a tap-hole stopped with loam, by means of which the iron was run out at the end of the process. The vessel should be placed so near to the discharge hole of the blast-furnace as to allow the iron to flow along a gutter into it. A small blast cylinder would be required, capable of compressing air to about 8 lb. or 10 lb. to the square inch. A communication having been made between it and the tuyeres before named, the converting vessel would be in a condition to commence work. It would, however, on the occasion of its being first used after re-lining with fire-bricks, be necessary to make a fire in the interior with a few baskets of coke, so as to dry the brickwork and heat up the vessel for the first operation, after which the fire would have to be all carefully raked out at the tapping-hole, which would again be made good with loam. The vessel would then be in readiness to commence work, and might be so continued without any use of fuel, until the brick lining in the course of time became worn away and a new lining was required. The tuyeres are situated nearly close to the bottom of the vessel; the fluid metal will therefore rise some eighteen inches or two feet above them. It is necessary, in order to prevent the metal from entering the tuyere-holes, to turn on the blast before allowing the fluid crude iron to run into the vessel from the blast-furnace. This having been done, and the fluid iron run in, a rapid boiling up of the

metal will be heard going on within the vessel, the metal being tossed violently about, and dashed from side to side, shaking the vessel by the force with which it moves from the throat of the converting vessel. Flame will then immediately issue, accompanied by a few bright sparks; this state of things will continue for about fifteen or twenty minutes, during which time the oxygen in the atmospheric air combines with the carbon contained in the iron, producing carbonic acid gas, and at the same time evolving a powerful heat. Now, as this heat is generated in the interior of, and is diffused in innumerable fiery bubbles through the whole fluid mass, the metal absorbs the greater part of it, and its temperature becomes immensely increased; and by the expiration of the fifteen or twenty minutes before named, that part of the carbon which appears mechanically mixed and diffused through the crude iron has been entirely consumed. The temperature, however, is so high that the chemically-combined carbon now begins to separate from the metal, as is at once indicated by an immense increase in the volume of flame rushing out of the throat of the vessel. The metal in the vessel now rises several inches above its natural level, and a light frothy slag makes its appearance, and is thrown out in large foam-like masses. This violent eruption of cinder generally lasts five or six minutes, when all further appearance of it ceases—a steady and powerful flame replacing the shower of sparks and cinder which always accompanies the boil. The rapid union of carbon and oxygen which thus takes place adds still further to the temperature of the metal, while the diminished quantity of carbon present, allows a part of the oxygen to combine with the iron, which undergoes combustion, and is converted into an oxide. At the excessive temperature that the metal has now acquired, the oxide, as soon as formed, undergoes fusion, and forms a powerful solvent of those earthy bases that are associated with the iron. The violent ebullition which is going on mixes most intimately with scoriæ and metal, every part of which is thus brought into contact with the fluid, which will thus wash and cleanse the metal most thoroughly from the silica and other earthy bases which are combined with the crude iron, while the sulphur and other volatile matters which cling so tenaciously to iron at ordinary temperatures are drawn off, the sulphur combining with the oxygen, and forming sulphurous acid gas. The loss in weight of crude iron during its conversion into an ingot of malleable iron, was found, on a mean of four experiments, to be 12¼ per cent., to which will have to be added the loss of metal in the finishing rolls. This will make the entire loss probably not less than 18 per cent., instead of about 28 per cent., which is the loss on the present system. A large portion of this metal is, however, recoverable, by treating with carbonaceous gases the rich oxides thrown out of the furnace during the boil. These slags are found to contain innumerable small grains of metallic iron, which are mechanically held in suspension in the slags, and may be easily recovered, by opening the tap-hole of the converting vessel, and allowing the fluid malleable iron to flow into the iron ingot moulds placed

there to receive it. The masses of iron thus formed will be perfectly free from any admixture of cinder, oxide, or other extraneous matters, and will be far more pure and in a sounder state of manufacture than a pile formed of ordinary puddle bars. And thus it will be seen, that by a single process, requiring no manipulation or particular skill, and with only one workman, from three to five tons of crude iron passes into the condition of several piles of malleable iron in from thirty to thirty-five minutes, with the expenditure of about one-third part the blast now used in a fiery furnace with an equal charge of iron, and with the consumption of no other fuel than is contained in the crude iron. To persons conversant with the manufacture of iron (said Mr. Bessamer,) it will be at once apparent that the ingots of malleable metal which I have described will have no hard or steely parts, such as are found in puddled iron, requiring a great amount of rolling to blend them with the general mass; nor will such ingots require an excess of rolling to expel cinder from the interior of the mass, since none can exist in the ingot, which is pure and perfectly homogeneous throughout, and hence requires only as much rolling as is necessary for the development of fibre; it therefore follows that, instead of forming a merchant bar or rail by the union of a number of separate pieces welded together, it will be far more simple and less expensive to make several bars or rails from a single ingot. Doubtless this would have been done long ago had not the whole process been limited by the size of the ball which the puddler could make. I wish to call the attention of the meeting to some of the peculiarities which distinguish cast steel from all other forms of iron—namely, the perfect homogeneous character of the metal, the entire absence of sand-cracks or flaws, and its greater cohesive force and elasticity, as compared with the blister steel from which it is made—qualities which it derives solely from its fusion and formation into ingots, all of which properties malleable iron acquires in a like manner by its fusion and formation into ingots in the new process; nor must it be forgotten that no amount of rolling will give to blister steel (although formed of rolled bars) the same homogeneous character that cast steel acquires by a mere extension of the ingot to some ten or twelve times its original length. One of the most important facts connected with the new system of manufacturing malleable iron is that all the iron so produced will be of that quality known as charcoal iron; not that any charcoal is used in its manufacture, but because the whole of the processes following the smelting of it are conducted entirely without contact with, or the use of, any mineral fuel; the iron resulting therefrom will in consequence be perfectly free from those injurious properties which that description of fuel never fails to impart to iron that is brought under its influence. At the same time this system of manufacturing malleable iron offers extraordinary facility for making large shafts, cranks and other heavy masses. It will be obvious that any weight of metal that can be founded in ordinary cast iron by the means at present at our disposal may also be founded in molten malleable iron, to be wrought

into the forms and shapes required, provided that we increase the size and power of our machinery to the extent necessary to deal with such large masses of metal. A few minutes' reflection will show the great anomaly presented by the scale on which the consecutive processes of iron making are at present carried on. The little furnaces originally used for smelting ore have been from time to time increased in size until they have assumed colossal proportions, and are made to operate on two or three hundred tons of materials at a time, giving out ten tons of fluid metal at a single run. The manufacturer has thus gone on increasing the size of his smelting furnaces, and adapting to their use the blast apparatus of the requisite proportions, and has by this means lessened the cost of production in every way. His large furnaces require a great deal less labor to produce a given weight of iron than would have been required to produce it with a dozen furnaces; and in like manner he diminishes his cost of fuel, blast, and repairs, while he ensures a uniformity in the result that never could have been arrived at by the use of a multiplicity of small furnaces. While the manufacturer has shown himself fully alive to these advantages, he has still been under the necessity of leaving the succeeding operations to be carried out on a scale wholly at variance with the principles he has found so advantageous in the smelting department. It is true that hitherto no better method was known than the puddling process, in which from 400 lb. to 500 lb. weight of iron is all that can be operated upon at a time; and even this small quantity is divided into homœopathic doses of some 70 lb. or 80 lb., each of which is moulded and fashioned by human labor, and carefully watched and tended in the furnace, and removed therefrom one at a time, to be carefully manipulated and squeezed into form. When we consider the vast extent of the manufacture, and the gigantic scale on which the early stages of the process is conducted, it is astonishing that no effort should have been made to raise the after-processes somewhat nearer to a level commensurate with the preceding ones, and thus rescue the trade from the trammels which have so long surrounded it. Before concluding these remarks, I beg to call your attention to an important fact connected with the new process, which affords peculiar facilities for the manufacture of cast steel.

At that stage of the process immediately after the boil, the whole of the crude iron has passed into the condition of cast steel of ordinary quality. By the continuation of the process, the steel so produced gradually loses its small remaining portion of carbon, and passes successively from hard to soft steel, and from soft steel to steely iron, and eventually to very soft iron; hence, at a certain period of the process, any quality of metal may be obtained. There is one in particular, which, by way of distinction, may be called semi-steel, being in hardness about midway between ordinary cast steel and soft malleable iron. This metal possesses the advantage of much greater tensile strength than soft iron. It is also more elastic, and does not readily take a permanent set, while it is much harder, and is not

worn or indented so easily as soft iron. At the same time, it is not so brittle or hard to work as ordinary cast steel. These qualities render it eminently well adapted to purposes where lightness and strength are specially required, or where there is much wear, as in the case of railway cars, which from their softness of texture soon become destroyed. The cost of semi-steel will be a fraction less than iron, because the loss of metal that takes place by oxidation in the converting vessel is about 2½ per cent. less than it is with iron; but as it is a little more difficult to roll, its cost per ton may be fairly considered to be the same as iron. But as its tensile strength is some 30 or 40 per cent. greater than bar iron, it follows that for most purposes a much less weight of metal may be used; so that, taken in that way, the semi-steel will form a much cheaper metal than any that we are at present acquainted with.

The facts which I have brought before the meeting are not mere laboratory experiments, but the result of working on a scale nearly twice as great as is pursued in our largest ironworks—the experimental apparatus doing 7 cwt. in thirty minutes, while the ordinary puddling furnace makes only 4½ cwt. in two hours, which is made into six separate balls, while the ingots or blooms are smooth, even prisms, ten inches square by thirty inches in length, weighing about equal to ten ordinary puddle balls.—*London Pharm. Jour. Sept.* 1856.

On the Utility of Bran in Bread as tending to aid Intestinal Evacuations. By M. C. Saucerotte, Chief Physician to the Luneville Hospital.—If, as appears to me certain, constipation is more frequent than it used to be, to what are we to attribute this fact? The causes are perhaps various, but there is one to which I am anxious to call the attention of my colleagues; because it seems to me the most general, and because it has hitherto been unobserved. I allude to the greater perfection to which we have brought *sifting the corn*, an operation the result of which is the extraction of all the bran contained in the flour, when done, as it now is, to 20 or 25 per cent., instead of 10 or 12 per cent., which used to be the amount removed, twenty years ago. Now, to obtain an exact idea of the results of this real or apparent perfection, it is necessary to know what is the effect of the bran on the hygienic and alimentary properties of the bread.

We should deceive ourselves, if we think that we may attribute perfect certainty to chemical results; in this instance at least, it is quite at fault. Nothing can possibly differ more than the analyses made of bran. Thus, M. Poggiale gives 34·57 per cent. of cellulose (ligneous matter), M. Payen only finds 4, M. Millon 9·7, M. Kekhulé 9·2. M. Millon, it is true, thinks that he has found the cause of these variations in the difference which exists between the bran obtained by the usual grinding, and that obtained by grinding freshly washed corn: but this is a point which has yet to be determined. M. Poggiale thinks that bran is very valueless, because, according to his researches, it contains but 44 per cent. of assimilable sub-

stances, and 56 per cent. of unassimilable substances, and, finally, because dogs fed on it, lost weight, which was not the case when they were fed on bread. But, according to M. Magendi, the animals live on brown bread, and die when fed on white bread.

Finally, M. Mouriet considers that in the internal part of the pellicle, there exists a ferment which renders starch fluid, which has the property of converting this substance into sugar, which otherwise would be rejected by the intestines as unassimilable. Thus, if bread in which the bran is left is not so nourishing as bread which is deprived of it, this inferiority is compensated for by qualities which are important with respect to digestibility; it is, moreover, more rapid. Moreover, which is my chief point, whether from its fermenting properties, or by a mechanical effect of the ligneous matters which it contains, it has the effect of increasing the peristaltic movement of the intestines, and, consequently, *of aiding the evacuations*. I say nothing here but what has been known from time immemorial. The ancients, who made three kinds of bread, of which one was inferior (*panis confusaneus*), and another quite coarse (*panis furfuraceus*), knew quite well how they varied in this respect. Hippocrates (*De victis rationis*) makes special mention of it, as well as Galen. *Parum alit et facile, subsidet et quia furfur non nihil habit facultatis detersoriæ id circo irritatis intestinis cito dejicitur.* This is very explicit.

Having been frequently consulted by my patients, of the superior classes especially, for they lead the most sedentary life, frequently of studious habits, and in whom a more delicate diet renders constipation more frequent, I have requested them to eat brown bread for breakfast, and I must say that the effect has always answered to my wishes. Bran has at all times one inestimable advantage over medicinal drugs; it does not fatigue the digestive organs, and frustrate the intestinal contraction, which is, to the degree desired by nature, necessary for the regularity of the functions. Finally, it has not the disadvantage of medicinal substances, of losing its efficacy from habit, and thus requiring increased doses to keep up its action.

Liebig says that the separation of the bran from the flour *is rather injurious than useful to nutrition*. In old times, until the epoch of the Roman Empire, bolted flour was unknown. In many parts of Germany, especially in Westphalia, they use the bran with the flour in the manufacture of the bread called *pumpernickel*, and there never were people whose digestion was in a better state. Without seeking examples from the other side of the Rhine, may we not judge from the healthy condition of the French peasantry who eat, almost all over France, bread in which the bran is left?

Let us then understand, that bolting the flour is a measure of luxury, and not of hygiene. It is probable that in this matter there has been made merely one of those false progresses, sometimes met with in the history of the sciences, which is considered one on face of *à priori* reasoning, and on the value of which, experience frequently pronounces in a manner which is opposed to theory.

This question is not only important in a medical point of view; it has a further interest from actual circumstances; because, by using unbolted flour for bread, we augment the product at least a fifth, or a sixth. The government might, consequently, by reducing the sifting to 10 per cent., as it used to be, cause a considerable diminution in the expense of the food of the army, and that, without in any way injuring the health of the troops. Whatever may be determined on, it will at any rate be acknowledged that the subject is worth consideration.—*Lond. Chemist, from Jour. de Chim. Méd.*

On the Assimilation of nitrogen by Plants, and on the Action of Nitrates as Manures. By THORNTON J. HERAPATH.

[Extract from a letter to Mr. John Watt.]

Dear Sir:—The March number of The Chemist contains translations of four valuable papers by MM. De Luca, Cloëz, Harting, and Ville, on the assimilation of the nitrogen of the air by vegetables, and on the natural formation of nitric acid in the soil. Having been for several years past engaged in investigating this subject, at the suggestion of the late Mr. Pusey, it may not perhaps be uninteresting were I to give you a short account of the conclusions at which I have arrived. They are as follows:—

1. That all soils contain an appreciable quantity of nitric acid, in the form of alkaline or earthy nitrates, (nitrates of soda or potassa, nitrate of lime, or nitrate of ammonia.)

2. That some soils contain a much larger proportion of these salts than others do.

3. That some fertile soils contain as much as 3 to 6-1000ths of alkaline or earthy nitrates.

4. That the presence of these salts in the soil is to be ascribed partly to the presence of the nitric acid, and nitrate of ammonia in rain water, and partly to the formation of nitric acid, from the spontaneous oxidation of the nitrogen of the air, and of that of decomposing animal and vrgetable matters, present in the soil, or added to it in shape of manure.

5. That some soils possess the power of transforming free nitrogen and nascent nitrogen into nitric acid, in a higher degree than others.

6. That light porous soils generally effect nitrification more readily than dense and heavy soils.

7. That, *cæteris paribus*, a larger proportion of nitric acid is produced in hot, than in cold weather.

8. That the fertility of soil for certain plants appears to be caused by those soils possessing this property of transforming nitrogen into nitric acid in an eminent degree.

9. That nitrogen in the form of nitric acid, in general, acts better as a manure, than nitrogen in the form of ammonia.

10. That nitrogen usually acts best as a manure when in the form of

nitrate of ammonia, or—when nitrogenous organic matter is present in the soil—as free nitric acid, or as nitrate of potassa, soda, or lime.

11. That nitric acid, free or combined, acts both as a stimulant and true manure.

12. That most plants possess the property of decomposing the alkaline and earthy nitrates, and of transforming them into proteïn or albumenized compounds; others, such for instance, as the beet, radish, tobacco (?), &c., store them up unchanged in their tissues; whilst a third class of plants, on the contrary, such as the nettles, *prunella vulgaris*, *datura stramonium*, *parietaria officinalis*, *borago* (?), &c., actually appear to possess the power of transforming ammonia or nitrogenous compounds into nitric acid.

I deeply regret that my departure from England will prevent me from furnishing you with the numerical results of my analyses, from which these conclusions were deduced.

Perhaps, however, at some future time, I may find leisure to prepare them for publication.

I remain, dear Sir, yours very truly,

THORNTON J. HERAPATH.

Old Park, Bristol. *The Chemist*, April, 1856.

Minutes of the Philadelphia College of Pharmacy.

Hall of the College, 9*mo.* 29, 1856.

At a stated meeting held this evening. 14 members present.

Samuel F. Troth, First Vice President, in the Chair.

The minutes of the annual meeting were read, and adopted.

A. B. Taylor, Secretary of the Board of Trustees, read the minutes of the Board for the past six months.

Thomas Weaver, Richard Peltz, F. Chapman Hill, William C. Bakes, T. Morris Perot, M. Henry Kollock, have been elected members since the last meeting. William Weightman, recommended to the College for election, was on ballot unanimously elected a resident member.

Prof. Procter, Corresponding Secretary, read a letter received by him from M. Buignet, Secretary of the Society of Pharmacy, Paris, being a favorable answer to the tender of exchange of Transactions with that body.

The delegates elected to represent this College in the American Pharmaceutical Association reported, that owing to the inability of A. B. Taylor to attend, they elected Frederick L. John to substitute him, and having all attended, have the satisfaction of reporting that the meeting was one of uncommon interest and profit, and that in addition to the extended operations to be detailed in the published Transactions already partly in print,

a large amount of labor was assigned to different committees and individual members, the results of which will be reported at the next annual meeting, to be held in this city in September, 1857.

It is hoped the interest taken in this Association by the members of this College will not be less than that manifested in the other cities in which meetings have been held, and that Philadelphia, having been the birthplace of the Association, will witness the most spirited and interesting meeting yet held.

E. Parrish, Chairman of the Executive Committee of the American Pharmaceutical Association, informed the College that the Association had instructed him to deposit the accumulated manuscript and other documents and effects of the Association, in a suitable temporary depository in Philadelphia, and on motion, it was

Resolved, That the College building be tendered for the deposit and preservation of the manuscript and other property of the American Pharmaceutical Association.

The Chairman appointed E. Parrish, Henry C. Blair, and W. Procter, Jr., the Obituary Committee for the ensuing year.

The semi-annual election for eight members of the Board of Trustees, resulted in the choice of the following:

Thomas P. James,	Jacob L. Smith,
Wm. J. Jenks,	Evan T. Ellis,
A. B. Taylor,	S. S. Garrigues,
H. C. Blair,	C. Bullock.

On motion, adjourned.

EDWARD PARRISH, *Secretary*.

Minutes of the Maryland College of Pharmacy.

Baltimore, July 3, 1856.

The College met at 4 o'clock, P. M., the President in the chair. Upon calling the roll ten members answered to their names. The minutes of the preceding meeting were then read and adopted. Mr. Smith, from the Committee on Certificates of Membership, stated that the Committee had endeavored to procure the completion of the engraving, but without success, and that impressions of the plate would no doubt be laid before the next meeting of the College.

Letters accepting honorary membership, conferred by the College at its meeting in May, from Professors W. E. A. Aiken, William Procter, Jr., David Stewart, Lewis H. Steiner, Christopher Johnston, and Mr. Wm. Smith Reese,

were read and ordered to be placed on file The Treasurer made the following report, which was read and accepted:

J. B. Baxley, Treasurer, in account with Maryland College of Pharmacy.

Amount of cash received from March 13th to July 1st, 1856,		
For installation fees - - - -		$180.00
Amount expended as per vouchers to July 1st, 1856,	$ 41.47	
Balance in hands of Treasurer . .	138.53	
		180.00
Amount due the College for installation fees,	$25.00	

Signed, J. B. BAXLEY, Treasurer.

On motion of Mr. Moore, a committee was appointed to wait on the Apothecaries of the city to ascertain what number of students, resident in the city, may be expected to attend the lectures during the ensuing fall and winter. The Chairman appointed Messrs. Smith, Moore and Thompson.

Mr. Baxley gave notice of a resolution to amend the By-Laws in Law 2nd, Section 4th, relating to the receiving of money by the Secretary; he proposes to strike out this section and to insert the word "receive" after the words "The Treasurer shall," in section 1st of law 3d.

The term of office of the President, Secretary, Treasurer and one of the Board of Examiners having expired, the College, in accordance with the requirement of the Charter, went into an election for those officers respectively. The following gentlemen were nominated and unanimously re-elected:

GEORGE W. ANDREWS, *President.*
WILLIAM S. THOMPSON, *Secretary.*
J. B. BAXLEY, *Treasurer.*
JOSEPH ROBERTS, *Examiner.*

Mr. Baxley proposed to adopt a formula for Stokes' Liniment, to be used by members of the College when that preparation is prescribed by Physicians; his attention had been directed to the matter by a physician, who states that his patients had been furnished with the article differing greatly, both in strength and appearance, from different shops. Mr. B. further stated that his object was to produce uniformity in the preparation. The formula now offered he believed to be the original as prescribed by Dr. Stokes. It is as follows:

R.	Ol. Terebinth.	f. ℥iij.	
	Acid. Acetic. fort.	f. ℥ss.	
	Vitellum Ovi	j.	
	Aquæ Rosæ	f. ℥iij.	
	Ol. Limonis	f. ℥j.	M.

This formula he had used for many years past, and upon inquiry he had found that several pharmaceutists of his acquaintance had used the same.

Mr. Roberts remarked that his formula differed in the proportion of the ingredients from that offered by Mr. Baxley, but that it had fully answered the expectations of physicians who had used it. Mr. Grahame, had also used a different formula, and his experience in the matter was similar to that of Mr. Roberts.

On motion of Mr. Moore, the formula offered by Mr. Baxley was adopted.

Mr. Moore gave notice of a proposed amendment of the By-Laws; he proposes to modify Section 2nd of Law 2nd, so that the Secretary may give notice of the meetings through the post office, instead of inserting a notice in one of the daily morning newspapers, as heretofore.

On motion the College adjourned.

MINUTES OF THE BOARD OF TRUSTEES.

Baltimore, July 3, 1856.

The Board met after the adjournment of the College, the President in the Chair; 7 members present.

The Board of Examiners reported favorably upon the application of Mr. Eugene J. T. Russell for membership, and he was unanimously elected.

On motion, Professors Grahame and Frick were authorized to select suitable bottles for specimens of Materia Medica.

On motion, it was resolved to request the Professors to prepare an advertisement of the School of Pharmacy, to occupy a page in the advertising department of the September number of the American Journal of Pharmacy.

On motion, the Board adjourned.

W. S. Thompson, Secretary.

MINUTES OF THE COLLEGE.

Baltimore, Aug. 7, 1856.

The College met, pursuant to adjournment, the President in the Chair. The Secretary being absent, Mr. Phillips was appointed Secretary pro tem. The roll being called, eleven members answered to their names.

Mr. Grahame, of the Committee on the Plate, reported, that on account of several inaccuracies in the proof sheet, the Plate would not be ready until the next meeting. The Committee on room being absent, no report was made.

The amendments offered at the previous meeting by Mr. Baxley on Law 2nd, Section 2nd, and Law 2nd, Section 4th, and by Mr. Moore on Law 2nd, Section 2nd, were then severally taken up and adopted.

On motion of Mr. Grahame, it was resolved that when the College adjourns, it do adjourn to 4 o'clock, P. M., Aug. 18th. No other business being offered, the College adjourned.

Baltimore, Aug. 18, 1856.

The College met pursuant to adjournment, the First Vice President, Mr. Grahame, in the Chair. Mr. Phillips acted as Secretary pro tem. Upon

calling the roll, 6 members were found to be present. The minutes of the preceding meeting were then read and adopted.

On motion, the College adjourned until 4 o'clock, P. M., Friday, Aug. 22nd, 1856.

L. PHILLIPS, Sec., pro tem.

Baltimore, Aug. 22, 1856.

The College met by adjournment, the President in the Chair; sixteen members present. The proceedings of the previous meeting were read and approved of.

The Committee on the plate for Certificate of Membership, reported its completion, and presented a proof impression for the inspection of members, which, after examination, was unanimously approved of, and on motion, the Certificate was adopted by the College.

The Committee appointed at a previous meeting to procure a suitable room for the purposes of the College was called upon for a report. The chairman, Mr. Baxley, stated that in consequence of absence from the city and other engagements, he had not been able to attend to the matter. The Committee was requested to make a report at the next meeting.

Mr. Moore, from the Committee, appointed at a previous meeting, to to wait on the apothecaries of the city, to ascertain the probable number of the class at the lectures, reported that the Committee had performed the duty assigned them. and that so far as they could ascertain, the class will number about 20 students.

The College then went into an election for five delegates to the National Pharmaceutical Convention, and elected the following gentlemen on the first ballot, viz:—George W. Andrews, Charles Caspari, Israel J. Grahame, J. Jacob Smith and J. Faris Moore.

On motion of Mr. Baxley, Messrs. Andrews, Caspari, Grahame, Smith and Moore were constituted a Committee of reception, to be in waiting at the rooms of the College of Dental Surgery on the afternoon of the 8th of September next.

On motion of Mr. Thompson, the same gentlemen were authorized to act as a discretionary Committee of Arrangements.

On motion the College the adjourned.

MINUTES OF THE BOARD OF TRUSTEES.

Baltimore, Aug. 27, 1556.

The Board met at 4 o'clock, P. M., upon call of the Chairman, the President in the Chair; seven members present.

The President stated that the object of the meeting was to make arrangements for furnishing and fitting up the room of the College.

Mr. Baxley from the Committee on room stated that the Committee had rented a room at the corner of Calvert and Water streets, at $100 per annum, from the 1st of September.

On motion of Mr. Baxley, a Committee of three was appointed to procure the necessary furniture and to fit up the room, the cost not to exceed $75. The chairman appointed Messrs. Moore, Sharp and Thompson.

On motion of Mr. Baxley, it was resolved to invite the Professors to attend at the next meeting of the Board.

On motion of Mr. Sharp, the Treasurer was authorized to have the Certificates of membership filled up, and to deliver them to the members upon receipt of the fee.

The Board then adjourned to meet on Thursday, September 4th, at 3 o'clock, P. M.

W. S. Thompson, Secretary.

Editorial Department.

Meeting of the American Pharmaceutical Association.—Our readers will find a report of the proceedings of the Baltimore meeting at the beginning of the present number, which we have compiled from the rough minutes and papers of the Secretary, and they can form some opinion of the character of the gathering from their perusal. In point of numbers and interest it was the most interesting occasion we have yet had, and though the immediate results are not as extensive as may have been anticipated, yet the prospect for the next meeting, arising from the action of committees on scientific and other subjects, is very promising with even ordinary interest on their part. The greatest harmony and good feeling prevailed, and the hospitality and kindness of our Baltimore brethren was as abundant as usual. Notwithstanding the Resolution adopted in New York last year to discourage the expensive habit of giving public entertainments on the occasions of the meetings of the Association, our Baltimore friends exceeded any effort of the kind hitherto made; and whilst among those who disapprove of these manifestions, as being burthensome to the givers and too often exceeding the bounds of moderation in their conduction, we have considerable disposition to excuse it in this instance, from the influence it is said to have had in drawing closer the cords of professional sympathy among the brethren there than on any former occasion. The meeting adjourned to convene in Philadelphia next September, when we hope to have the largest and most interesting meeting that has yet occurred, under the impetus given at Baltimore.

Apothecaries Association of the District of Columbia.—Mr. Harbaugh, of Washington, has sent us a copy of a Bill presented to the last session of Congress, designed to incorporate the above institution, of

which he is the president, and which passed the Senate, and failed in the House only by not being reached, owing to the pressure of other business. It is therefore probable that, at the coming session, the Association will be chartered. The bill authorizes them to hold property to the amount of $20,000, to mortgage and sell the same, to give instruction in the several branches of a pharmaceutical education, and grant diplomas to such students as may be qualified, &c.

From the well known energy of some of the gentlemen connected with the "Association," we believe it will be sustained until it takes root and produces fruit. We believe that the Institution will in time be useful to government, and its cabinet may be made the receptacle of many valuable products, collected from abroad through the agency of the Patent Office and the navy.

Alcoholometric Tables.—A correspondent desires the publication of a portion of the tables, used by the Government in the examination of alcohol. We have not been able to give the space in this number, but will endeavor to do it in a future issue.

Compound Syrup of Squill.—The following note has been received from a correspondent in Boston:

Boston, Oct. 1, 1856.

Dear Sir:—I observed in your last Journal a method proposed for making the compound syrup of squills, in which dilute acetic acid is used as the solvent of the squill. I wish to enquire whether acetic acid is, or is not, incompatible with the tartar emetic dissolved in the syrup? Tartar emetic is marked as incompatible with acetic acid in Paris Pharmacologia. On the other hand, I obtained crystals resembling, in taste and appearance, crystals of tartar emetic, from a solution of that salt in dilute acetic acid. W.

Acetic acid under, the circumstances indicated above, does not decompose tartrate of antimony and potassa.

Lectures on Materia Medica and Therapeutics, delivered in the College of Physicians and Surgeons of University of New York. By John P. Beck, Late Prof. Materia Medica, &c. *Prepared for the press by his friend,* C. R. Gilman, M. D., &c. *Second edition.* New York: S. S. & W. Wood, 1856. Pp. 559, 8vo.

This book commences with an introductory chapter, a few words of which are directed to the manner in which the materia medica will be considered, whilst the larger portion is directed to therapeutics, pointing out the author's mode of treating the subject. The action of medicines physiological and curative, the modes or forms of their application, and the author's classification of remedies are then considered. The following chapter is devoted to proximate principles of drugs, which he arranges thus: 1st. Organic Acids and their Salts. 2d. Organic Alkalies and the Substances allied to them. 3d. Oleaginous, Resinous and Bituminous Princi-

ples. 4th. Alcoholic and Ethereal Principles. 5th. Sugars and their Congeners.

The descriptions of these principles are very brief, and they extend only to the more prominent articles. The following extract will explain.—

"*Gallic Acid.*—This acid is formed from tannin by a kind of fermentation. It is obtained from the gall nut. When pure, it is in the form of small, feathery and nearly colorless crystals, which have a fine silky lustre. Its taste is slightly acid and stiptic; it is soluble in 100 parts of cold and in 3 parts of boiling water. Gallic acid does not precipitate gelatin, by which it is distinguished from tannic acid, with which it is often associated. With a proto salt of iron, no change is produced, but with a per salt a deep bluish black precipitate falls, which disappears when the liquid is heated, from the reduction of the peroxide of iron to the protoxide at the expense of the gallic acid. With bases this acid forms *gallates*."

The descriptions of the alkaloids are even more brief. We believe this chapter might have been dispensed with, as the same principles are noticed to a greater or less extent under the several heads of drugs producing them, with a few exceptions.

The following is the author's classification of remedies, viz.: Emetics, Cathartics, Anthelmentics, Sialagogues, Diaphoretics, Expectorants, Diuretics, Emenagogues, Parturients, Sedatives, Refrigerants, Demulcents, Narcotics, [Anæsthetics added by the Editor,] Stimulants, Nervines, Tonics, Astringents, Revulsives and Alteratives. By far the larger portion of the work is devoted to therapeutics, and only so much of materia medica is brought in as to introduce the several subjects to the student's attention, except in a few instances, as opium, senna, cinchona, &c. The author makes no attempt at a scientific view of materia medica, and many of the details are by no means properly brought out. For instance, in speaking of cinchona he does not describe the botanical species yielding the barks. Quinidia is not named; and most of the recent discoveries growing out of the introduction of the Columbian barks for manufacturing quinia are not noticed.

In regard to nomenclature the author bestows very little care, as he confines himself to no Pharmacopœia. The chapters are sometimes headed with latin names and sometimes with English, and in the preparations an equal disregard of uniformity is exhibited, of which the following is an example: *Calumba. Morphinæ. Pulvis Opii et Ipecacuanhæ Compositus. Hydrargyri Nitrico-oxidum. Castor Oil. Sulphas Sodæ, &c.* The author does not appear to have had much regard for the United States Pharmacopœia as a national guide in this respect.

As the work is not intended for the pharmaceutist, but is addressed to the medical student and physician, more especially the student, it is to be regretted that the nomenclature of our Pharmacopœia was not employed. Such omissions are one cause of the great want of uniformity in the language of prescriptions. As a text-book for the materia medica, Dr. Beck's work falls short of what we should esteem required by the student, unless

its use is to be viewed as merely auxiliary to lectures on therapeutics, referring the student to the Dispensatories for further information. It is not full enough in any other view, nor are the facts brought up to the present time as fully as should be the case. In reference to that larger and more important portion of the "Lectures" devoted to therapeutics, we will leave its examination to the medical journals. From a glance over the pages we believe that in this portion the chief merit of the work will be found, and much useful information communicated, not only because more space is devoted to it, but because the author, as a teacher, appears to have directed his hearers more to the action and application of medicines than to the remedies themselves; a course quite usual with Professors of Materia Medica, and satisfactorily accounting for the limited scientific knowledge of materia medica and pharmacy possessed by a large proportion of the medical profession.

The book is well printed on good good paper, and in a style creditable to the enterprizing publishers, Messrs. Wood, of New York.

A Treatise on Therapeutics and Pharmacology or Materia Medica. By George B. Wood, M. D., late President of the American Medical Association, &c., &c. *In two volumes.* Philad.: J. B. Lippincott & Co. London: Trübner & Co. 1856. pp. 1741.

We acknowledge the reception of these volumes from the author, but have not yet had time to examine them closely. A slight inspection gives promise that they fully sustain the author's reputation as a close observer and accurate writer.

Maryland College of Pharmacy.—Our readers will observe at page 9 of the advertising sheet, the announcement of the School of Pharmacy of the Maryland College, which opens its session the third of November.

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